

# The Plough, the Loom, and the Anvil.

VOL. I.

SEPTEMBER, 1848.

No. III.

## THE IRON TRADE OF THE UNION, AND ITS INFLUENCE UPON THE INTERESTS OF THE FARMER AND PLANTER.

EVERY man is either a customer to the farmer and planter, or a rival to him. Every man that is raised here, and every one that is imported, may be made a customer while employing himself in the work of fashioning wool or cotton into cloth, or coal and ore into iron, or wood and iron into ploughs, and axes, and harrows, or into steamboats, or cotton, or woollen, or other machinery, but if prevented from becoming a customer he must himself become a producer of food, or cotton, and therefore a rival to the farmer and planter. The larger the proportion of consumers to producers, the larger will be the return to the labor of the farmer and planter, and the more valuable will be their land. The larger the proportion of producers to consumers, the smaller will be the return to the labors of the farmer, and the less valuable will be his land. These are plain and simple truths, which we desire to impress on the minds of our agricultural readers, before asking them to accompany us in an examination of the influence upon their interests now exercised by the iron trade of the Union.

In looking at the coal trade we began with the producers. In the present case we shall begin with the consumers. And first, we may inquire who are the real consumers of all the vast mass of iron that is manufactured and imported?

The farmer and planter require vast quantities of iron for the construction of axes, and ploughs, and harrows, and other implements required to be used in the production of food and of the raw materials of clothing—large quantities for the transportation of their produce in carts, and wagons, and steamboats, and cars, and on railroads, to the place of consumption, and for bringing back the sugar, and the coffee, and the cloths, required for their nourishment and protection—and other large quantities for the machinery required for the conversion of their wool and cotton into cloth, their timber into buckets and tubs, and carts, and wagons, and steamboats, and the thousand other articles required for the uses of themselves and their fellow-men. They are the great consumers of iron. They use nine-tenths of all that is made and all that is imported. They pay for nearly all of it, for of the little that is not directly consumed and paid for by them, a large portion is consumed and paid for by men who live by transporting and exchanging their products, themselves producing nothing.

Nevertheless, they appear to buy very little of it. Why is it so? It is because the present system of the world causes the waste of a large portion of their products on the road, and in the work of transportation and exchange, the planter giving five bales of cotton for one bale of cloth when he should receive two bales of cloth for three bales of cotton, and would receive them but for the wasteful process to which we have referred. Towns and cities are thus built up at the cost of the planter and farmer, who remain poor and are compelled to scatter themselves over the earth, and to solicit the people of those towns and cities to make roads for them, when, if they had the

fashioner of their products in their own neighbourhoods, they would grow rich and make their own roads. They it is that consume railroad iron, and iron in all its other forms, and they it is that pay for it, although indirectly.

If, now, we desire to understand how they pay for it, we may begin by placing ourselves alongside of a furnace, or rolling-mill, and watching how the farmer pays to the furnace-master the price of a ton of iron. On one day, he carries him a load of potatoes. On another, he carries eggs, and milk, and veal. On another, a load of hay. On a fourth, he carries him a load of lumber, the produce of his best lands, so heavily timbered that heretofore he could not venture to incur the expense of clearing them. On a fifth, he sells a day's work of his son and himself, his horses and wagon, not then required on the farm. On some of these occasions he carries back manure to return to his farm a portion of what he took from it, and the result at the close of the year is, that he has his iron paid for and that his farm is improved, and by the very process opened to him by the vicinity of the furnace, to a twice greater extent than the value of the iron itself. He has thus earned treble wages. He has received the price of the labor and his products once in iron, and twice in the improvement of his farm. To all who desire to study this process, we would recommend that they should place themselves alongside of a little town growing by aid of concentration, and see if we have erred in our estimate of the advantages derived by the farmer from its proximity, unless indeed we have done so in under-estimating them, as we believe to be the case.

Let us now place ourselves alongside of the man who is distant hundreds or thousands of miles from furnaces and rolling-mills, and see how he pays for his iron. It is obvious that he cannot send potatoes, or hay, or milk, or turnips, or any other of the commodities of which the earth yields largely. He may send wheat, of which the yield is 600 or 800 pounds to the acre—or cotton, of which he obtains 200 or 300 pounds, but from them no manure is returned, and he exhausts his land. He cannot sell the day's labor of his son or himself, his wagon or his horses, and all remain unemployed when not required on the farm. He has no market for his timber, and his best soils remain uncleared and unimproved. Nevertheless, the iron must be paid for, or he cannot have it. He sends the wheat, or the cotton, produced on poor lands, and having exhausted them, he flies to other poor lands. He has the iron, but his farm is deteriorated to the whole extent of its value. He has been paid once where the other has been paid three times.

We may now inquire what is the quantity of land and labor required for paying for this ton of iron.

An acre of land, to which the manure is returned, may be made to yield 400 bushels of potatoes, and half that product will pay for a ton of iron.

An acre of land may be made to yield two tons of hay, besides affording pasture for cows, whose milk, united with the hay, will almost pay for a ton of iron.

An acre of naturally good land will yield twenty bushels of wheat, but if the manure be regularly wasted on the road, it will fall to twelve or ten, as has been the case in New York and Ohio, and then it will require three or four acres to pay for a ton of iron. If the process be continued, it will in a little time take half a dozen acres to do it, and in a little further time the land will be abandoned.

An acre of cotton land yields two hundred pounds, and a thousand pounds, the produce of five acres, will be required to pay for a ton of iron. If it be regularly exhausted, the time will arrive when it will require a dozen acres, and then the owner will fly from it, as he is now doing in South Carolina.

In the first case, the price of the iron is the use of half an acre of land

and the labor bestowed thereon. In the second, that of an acre. In the third that of three or four, and in the last, five acres. The owners of the first and second give little land and labor to obtain a large return. The third and fourth give much land and labor and obtain a small return. The former become rich and their sons and daughters marry and remain near them. The latter see their daughters remain unmarried, because all the young men of the neighborhood fly to the west, and ultimately abandon their farms and fly to the west themselves.

The farmer and planter are the real paymasters for the iron, and it rests with themselves to determine how they will pay for it—whether by the mode that enriches them and their land, or that which impoverishes both. In 1842, they determined that it should be paid for in potatoes, and hay, and milk, and veal, and the result was that in 1847, there were made about 700,000 tons, worth in the various forms it was used, stoves, railroad bars, machinery, axes, ploughs, &c., at least \$100 per ton, or seventy millions of dollars, and making a market for almost that amount of bulky articles of food, the refuse of which went back upon the land. In 1846, they determined to try if it could be had cheaper elsewhere, the result of which is that much of it has now to be paid for in wheat and cotton, of which the earth yields little, and of that little obtaining nothing in return.

The quantity of iron paid for in 1847 was probably double what was paid for in 1843, and the amount paid was greater in the former year by at least thirty-five millions of dollars than in the latter, and yet the payment of this vast amount was unfelt. Why was it so? Simply because the major part of it was paid for in commodities of which the return to labor was large, potatoes, and milk, and hay, and a large portion in labor of men and horses, that would otherwise have been wasted, and in timber that would have been valueless—and because, with every step in this process the land was improved to a greater extent than the value of the iron itself. Were all the furnaces and rolling-mills created within the last four years now to be stopped, and the quantity produced at home to be reduced to 350,000 tons, the quantity imported to take its place would not, we believe, amount to 80,000 tons, and the payment for even that quantity would be seriously felt, because it would be made in commodities of which little is returned to the labor employed in cultivation, and its export tends to the exhaustion of the land.

It is impossible to avoid being struck with the wonderful increase in the consumption of commodities of every description as soon as they come to be manufactured at home, and the reason for that increase is, that every such manufacture feeds itself by finding employment for labor and for things that would otherwise be wasted, and a market for those things the production of which enriches the farmer and his land at one and the same time. But a few years since, a gold pencil-case was a rarity not to be found in our principal cities, as we have had occasion to know from having ourselves made the search. Now, about 100,000 are made in a year in New York alone, in whose immediate vicinity live the farmers who send in a single day ninety tons of strawberries and milk to market. The pencil-makers help to make the market for the strawberries, and the farmer obtains hundreds of dollars from a single acre that would not have produced a dozen bushels of wheat but for the proximity of a market for its products, whence the manure could readily be returned.

We would now ask the farmer and planter, live where they may, to look around them and see if their neighbors and themselves, their sons and daughters, or their hands, do not waste more time for want of a regular demand for labor throughout the year, than would convert into yarn all the cotton and wool of the neighborhood, and if they do not themselves lose more for want of aid in



harvest than would pay for weaving it. We would next ask them to see if they do not waste more food than would feed the spinners and weavers, and then see if all that food would not be clear gain, as the persons who would be spinners and weavers must, and do, eat while engaged in doing nothing. Having done this, let them determine if the whole work of spinning and weaving would not be so much clear gain to them. Let them next see if they do not now waste more manure on the road, and at the distant markets, for want of a market at home, than would enrich the poor lands they now cultivate, and then let them determine how much more productive would be their labor if they could sell the timber which now covers their richest lands, remaining to this day unimproved because of the excessive size of that timber, and of the cost that would attend the work of its destruction. Let them then calculate the amount of taxes upon those now unproductive lands, and determine what would be their value if a market were provided on the ground for the hay, and milk, and butter, and veal, and beef, they could yield, and that market supplied by men and women, and boys and girls, now often unemployed, but then employed in enabling him to export cloth instead of wool, or cotton, and corn. Having done all this, they will satisfy themselves not only that the labor employed in the work of conversion is all clear gain, but that there is a further and great gain in the improvement of the machine given for the production of food and wool, more than equal to the whole labor employed in the work of conversion. The earth is the great machine—the one that improves with use, and improves most where most used, and therefore it is that the consumption of cotton and woollen cloths, and iron, and paper, and pencil-cases, and all other articles of necessity and luxury, increases so rapidly when the work of conversion is performed at home. It is the work that is twice blessed. “It blesseth him that gives and him that takes.” If we desire evidence of this, we need only look to those parts of the world in which a market is found *on the land for the products of the land*, and compare the neat and comfortable houses and beautiful farms of Belgium, or of Tuscany, with the squalid wretchedness and poverty of Poland or Southern Russia, which export cheap food to England—to that country which now keeps itself poor by comparison with what she might be, because she expels men and wealth and imports food, while neglecting her own agriculture and compelling the world to use her looms when they would prefer to use their own, consuming their food upon the spot on which it was produced.

So entirely a gain is the labor applied to the fashioning of the raw materials yielded by the earth, that we feel perfectly safe in asserting that were all the coal and iron mines, the furnaces and rolling-mills, the cotton and woollen factories, the paper mills and the printing-offices, closed, and the whole labor therein employed turned to the production of food, the quantity of food produced would in a short time be less than it is now, for the reason that the labor which is now employed in producing tons of potatoes and turnips, hay, and milk, and veal, and strawberries, and cabbages, would be then turned to the production of commodities of which the earth yields by bushels, and which therefore bear to be exported. If we wish evidence of this, we may find it in the fact that New England, dense as is her population, can yet export hay, while South Carolina, sparsely peopled as she is, and with millions of acres fitted to yield the finest hay, imports it from the north. When that State shall obtain consumers on the ground for her rice and her cotton, she too may export hay, because she will then have railroads upon which it may be carried.

Were the whole labor-power of the Union turned to the production of food, and cotton, and tobacco, and hemp, the product of agriculture would be less than it is now, and for the simple reason that the process of exhaustion would be more rapid. For evidence of this, we need look no further than Virginia



or South Carolina; but if further evidence be required, it may be found in the impoverished state of every country that has made no market on the land for the products of the land. If this be so, it must be evident that every increase in the number of consumers tends to increase the product of agriculture to an extent exceeding the demands of those consumers, and that the gain to the community is more than the whole amount of their consumption.

Whenever the consumers of Poland, employed in fashioning the products of the earth, shall become as numerous as are now those of England, or New England, the great machine will yield by tons instead of bushels, and the producers will grow rich; and whenever the consumers of New England, or of the United States at large, shall become as few as are now those of Poland, the earth will yield by bushels instead of tons, and the producers will become as poor as those of Poland, and may then enter fairly into competition with them for the supply of the English markets.

It will be asked: if all this vast gain—and vast it is—results from thus applying labor to the work of conversion, bringing the consumer to the side of the producer, why is it that protection is required for enabling the latter to induce the former to take his place by his side? The reason is to be found in the unceasing changes resulting from the unsound and unnatural state of things existing in other parts of the world. For the last thirty years the average price of merchant bar-iron in England is stated to have been £8, 9s. 3d., or about \$41 per ton. Within that time it has been up to £13, and down to £4, 15s., thus fluctuating between \$62 40 and \$23 80. In 1843, only four years since, the latter was the price. Last year, it was £8, 10s., or \$40 80. Now, it is about £6, or \$28 80.

What now, we would ask the farmer or planter to inquire, is the consequence of this? Let him look around and he will find the answer. He will see that almost as surely as a furnace or a rolling-mill is built, its owner is ruined by changes over which he has, and can have, no control. Judging from the past, all that such a man can hope for is that he may have a year or two of high prices, to enable him to provide against succeeding years of low ones, when he would otherwise be ruined. He is buying a lottery ticket, and he must trust to fortune to determine whether it shall be a blank or a prize. Last year, furnaces and rolling-mills were built everywhere, and the manufacture of iron made such progress as to warrant the belief that a very short time would place it beyond the reach of danger. Now, many of the parties are ruined, and all are in danger of being so. Their tickets have come out blanks. At the *average* price of England, with a very moderate protection, they could live, and soon they would cease to need protection. At the low prices of England, they cannot live.

These changes are unnatural. It required no more labor to mine and smelt the ore, and to roll the iron, in 1825 or 1846, than it did in 1843, and the quantity obtained in return to a given quantity of labor was as great in the one case as in the other. The return to the labor of the farmer is liable to great variation from the character of the seasons, and he may have twenty bushels in one year while obtaining but ten in the next, but such is not the case with the labor applied to the conversion of ore and coal into iron, or cotton and wool into cloth. In those cases, what can be done on any one day can be done on any other, and that for years in succession, with, of course, gradual increase from the improvement of machinery. The cost, in labor, of food and of the materials of clothing, and of other raw materials, is thus liable to changes, but the cost of iron, of cloths and of manufactured commodities generally, tends to remain stationary, except so far as they are subject to change from the greater or less supplies of the raw material in good or bad seasons, and yet the price of iron is as variable as that of food.

It goes up to 10 or 12, and down to 4 or 5, and it does this simply because in Europe nothing is permitted to take its natural course. At one time laws for making roads are refused, and iron is cheap. At another, laws are granted by hundreds, and iron is dear. At a third, it is found that speculation has caused roads to be made too fast, and iron is again cheap. From hour to hour the system changes, and universal ruin is the result. The furnace-master here has his market destroyed, and if he would not himself be ruined, he must discharge his hands, who are forced to go and join the farmer in raising more wheat, instead of consuming potatoes or cabbages.

Such results are due in a great degree to the fact that the farmer and planter pay *indirectly* for the vast quantities of iron that they consume, and not directly. If the farmer obtained his axes and ploughs, and spades and harrows, and the use of railroad iron, directly from the workers in iron, in his neighborhood, paying them in labor, and in cabbages and potatoes, it would matter little to him what was the price of iron in the general market, so long as he received the same quantity of it for his day's labor, for his bushels of potatoes, his tons of hay, his gallons of milk, or his loads of lumber. He would see at once that the market for those commodities was quite as important to him as could be the market for iron to the owner of the rolling-mill, or the market for axes to the maker of axes, and that the only result that could follow from his ceasing to buy from his neighbor, would be that his neighbor would cease to buy from him. Unfortunately for him, however, the whole system of trade tends to his impoverishment, and he is obliged to look to the people of distant towns and cities to supply him with axes and spades, and to make his roads, all of which they do by aid of the large portion of his products that they retain as their charge for performing for him the work of exchange. With them, the only question is, what is the smallest quantity of money that will purchase the iron with which to make axes, spades, or railroads? The money price of iron in England has fallen, and as the city capitalist has neither potatoes, nor hay, nor milk to sell, he buys his iron abroad instead of buying it at home, and the farmer is supplied with axes bought with money abroad, while his potatoes and his turnips rot on his hands at home, and he is obliged to give his milk to his hogs, because his neighbor the furnace-master has been ruined. He pays for his axes in wheat, of which it takes the produce of three or four acres to purchase as much as would have been paid for by half an acre of potatoes, and he loses all the manure, and his land and himself are impoverished, and then he flies to the west to seek new lands upon which to repeat the same operation.

The farmer and planter require protection to enable them to bring the loom and the anvil to the side of the plough, and they do so only because the unnatural, and consequently unsteady, system of the trade of the world has tended to drive men to congregate in large manufacturing towns and cities, and to compel both farmer and planter to waste in the work of transportation and exchange a large portion of their time, and a very large portion of their products, and to keep them poor. That protection they will take whenever they shall come fully to understand that the towns and cities of the world are built up at their expense—that they are kept poor by operations that make others rich—and that it is for that reason alone that they are compelled to call upon others to make their roads. With every step in the progress of concentration, by means of bringing the consumer directly to the side of the producer, the necessity for roads diminishes, and the power to make them for themselves increases, as they may readily see if they will travel through New England, or New York, or in the neighborhood of any place where the consumer and producer are fairly established in the neighborhood of each other. The whole manufacturing system of the world at the pre-

sent time is one of centralization, which always enriches the few at the expense of the many. Concentration will enable the many to grow rich, and will tend to improvement and equality of condition, physical, moral, intellectual, and political—but that cannot be obtained so long as the farmer shall be compelled to buy his iron at a distance, while unable to sell his potatoes and his turnips, and the labor of himself and his horses, to the furnace master at home, ruined by the sudden downfall of iron in the market of the world, produced by changes of policy over which neither he nor the farmer could have any control.

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### AGRICULTURAL SCHOOLS.

THE various attempts to establish Agricultural Schools in the United States have for the most part originated in laudable intentions; but being rudely planned, and with inadequate means, especially in the number and acquirements of the Professors, they have but imperfectly succeeded. They seem rather to have indicated the existence of a vague public feeling demanding the establishment of such schools, than any thorough conception of the appointments and materials requisite for their efficient organization.

In some cases, however, the conviction has been, though few may have been found to avow it, that the object of those who got up the agitation, hiring men to go round and procure signatures of Tom, Dick, and Harry, as they might be met here and there, and paying so much per name, out of the funds committed to their care by a credulous public—the general conviction has been, we say, that with such agitators the object was one of sheer speculation—to make money and to obtain influence. Such men, who live by flying a succession of humbugs, have endeavored to persuade the public and the public authorities, to establish great schools, near large cities, and have most innocently demanded to have them placed under their “auspices!”—in other words, to make them subservient to their personal management, convenience, and ambition; without the possession, on their part, of the industry, acquirements, or public spirit essential to those who take charge of all public institutions, and most especially such as are founded for the sacred purposes of intellectual and moral instruction.

But, as might have been expected, the first inquiry of the public and the public authorities has been,—whether any institution could be entitled to confidence and State patronage, that could not *conduct itself*, without being put under the guardianship of dry nurses who already have on hand, in the administration of other institutes, more than they can manage with that vigor and efficiency which their accumulated and accumulating means would enable them to do, if they would study usefulness more and humbugging less.

In other cases again, of undertaking to establish agricultural institutions for education, where the motive has been fair and honorable, a predominance has been given to the *military* feature of the school, incompatible, as we respectfully think, with that true and well-founded view of the public welfare that should prompt the farmer and the planter of this country to support all military establishments with habitual reluctance and distrust; and to regard them, if necessary at all, as necessary and deplorable sores on the body politic—natural enough, nay inseparable from a state of barbarism, where stratagem and warlike prowess take the place of cultivated humanity and justice; but utterly inconsistent with that high state of moral civilization which should be the constant aim and animating hope, ay, which should form *part of the education* of every Christian people.

Few indeed seem to have a just conception of the difficulty of procuring the various intellectual force which is necessary for the conduct of agricul-



tural colleges—a sort of force rare in our country; that is, where the school is to be one in which the several sciences naturally allied to agriculture are to be thoroughly taught. For manual schools, however, where the best practice of agriculture is to be daily inculcated and wrought at; in combination with a plain English education, including the lower branches of mathematics and practical surveying, the case would be very different; as for these schools which would be much more generally useful, we have both the means and the materials—the teachers qualified to instruct, and millions of boys who, by such a course of instruction, would be raised in the scale of real usefulness and respectability, in a manner to increase prodigiously the character and productive capacity of the agricultural classes.

But for schools of the higher class, competent teachers, as we have said, are not easily to be had—and where such can be found, they would be justly entitled to a grade of compensation that would make the school inaccessible to all but the wealthy—for the planter and the farmer is not now to be told, that for instruction in the great business of agriculture, the source of prosperity for all other pursuits, not a dollar is to be had from the government. Their Representatives, so called, have not even the courage or patriotism to demand it, while they are voting hundreds of thousands for surveys and institutions to diffuse *military* knowledge.

That the reader may have some idea of the difference in the character of the two classes of agricultural schools to which we have alluded, and judge the better, which is best adapted to our country, and most within the bounds of practicability and most likely to be useful, we may add that in England there are eminently *high* and again *low* schools of this sort, as he may perceive by what follows, and which we find in the agricultural journals of late date. They may answer not as models to be exactly followed in this country, but as affording hints that may be turned to account. Suppose, for example, one of those good farmers in the Quaker settlement in Hartford or Montgomery County in Maryland, would take twenty boys at twelve years of age to be bound to him until eighteen, ought not the Orphans' Court to be well pleased to have such an opportunity to provide for all that fall under their control, to place them where instruction would be blended with such fine examples of morality and thriftiness?

*"Hoddesdon Agricultural Training School.*—The annual distribution of prizes to the successful students in this highly useful and prosperous institution took place on Monday se'nnight. There was a very large attendance of ladies and gentlemen from the surrounding neighborhood, and many of the relatives of the students were also present. The venerable Lord Dacre had consented to preside on the occasion, but, in consequence of ill health, was unable to fulfil the promise which he made. Under these circumstances, Mr. Haselwood, the Head Master, applied to Lord Dudley Stuart, M. P., who kindly undertook to occupy the chair, and deliver the prizes. Among those present, we observed Captain Townshend, M. P.; Mrs. Townshend and family; Mr. G. J., and Mrs. Bosanquet and family; Mr. C. Phelps; Mr. E., and Mrs. Lomax and family; Rev. H. Blane; Mr. Wm., and Mrs. Mylne and family; Captain O'Brien, R. N.; Dr. and Mrs. Buchanan; Mr. H. Thoresby; Mr. Peter Christie; Mr. Charles Christie; Messrs. Horley, Stokes, S. B. Bridge, J. Bigg, W. Heard, Hobbs, Clark, Roberts, &c.; Professors Simonds, Woodward, and Donaldson.

"The Head Master then read the report of the state of the school during the past year.

"The Chairman then distributed the prizes as follows to the successful students, making suitable laudatory and encouraging observations upon the delivery of each."

Here follow the names of those to whom gold and silver medals and other prizes were awarded separately for *general proficiency—general improvement—agriculture—botany—chemistry—geology—veterinary—mechanics—mathematics—surveying—artificers' work—Latin—French—German—history—geography—arithmetic—mapping—drawing—best collection of British grasses, and general good conduct.*

"In the course of the delivery of the prizes, the Head Master remarked, that in consequence of the papers sent in for the veterinary prize not being equal in merit to the standard required in the school, it had been withheld, and extra prizes for good conduct given instead. The same remark applied to the prize usually given for proficiency in German.

"The noble Chairman then addressed the meeting, after which the company separated."

The next is an account of a school of quite a different character—one of individual institution and management, and which would appear to be at once useful and feasible in most of our agricultural districts. In our country the fault is that we are apt to go upon extremes. In one end of it, boys are not reared in habits of bodily labor, and in the other end, their labor, or the proceeds of it, is so much a matter of sordid calculation, that many parents will not spare them long enough from the field to obtain even a good sound practical English education, so far as to embrace ordinary mathematics and surveying.

It seems that in England a Mr. Batson has established on his own hook a system of "agricultural training," which has been highly extolled by no less authority than Mr. Mechi, one of the most enlightened and spirited agriculturists of the age. In consequence of what was said by him at a meeting of an agricultural society, and the expression of his conviction that it would continue to succeed, the Editor of the Hereford Times applied to Mr. Batson for an account of his system, to which he gave the following answer. While aware that in many of the items given, this account may not be applicable to our country, some hints may yet be taken from it and made available for practical purposes. Who is it that cannot name, among farmers known to him, one or more, who, if they could be prevailed on to undertake it, might bring forward and turn out a number of young men, under whose management the whole face of the country might be changed for the better? But all these improvements will come, when a settled and steady demand shall have arisen, under the influence of a policy that shall concentrate instead of scattering, and give encouragement to all industrial pursuits. Supply will follow assured demand as certainly as that matter will for ever obey the laws of gravitation.

DEAR SIR.—Agreeably with my promise, I forward you some account of the system I have adopted with the boys on my farm—a system which, I have much pleasure in saying, has realized my most sanguine expectations.

It is now nearly three years since I first formed a gang of boys, taking them merely as daily laborers, and paying them at the rate of 3s. per week in winter, and 4s. per week in summer; but, finding I could make no certainty of their attendance, and that there was considerable difficulty in adopting a regular system of discipline, owing to the want of education and *bad management at home*, I made the necessary accommodation for the reception of twenty boys on my premises, about fifteen months since, and took them under my own care entirely for a term of four years—boarding, clothing, and educating them in lieu of their daily labor on the farm—their ages averaging between nine and fourteen years.

The system that I adopted was this:—Each boy was to be provided with two suits of clothes—one for working in and the other for better use—with, also, a complete stock of linen, shoes, &c.; and at the end of four years I send them back with a like equipment.

The working hours are from six till six in summer, and during the winter they work while it is light.

The meal-times are at 9 o'clock, when they have half an hour for breakfast; at one o'clock, an hour for dinner; and at six o'clock, when they also have half an hour for supper; and the evenings are spent in education until nine o'clock, when prayers are read, and they retire to rest.

The food consists of bread and milk, or bread and broth, for breakfast; bread, meat, and vegetables, for dinner; and bread and cheese for supper; with the addition of coffee and pudding on Sundays. According to the rule universally observed on my farm, *no beer or cider is allowed, excepting during the hay and corn harvests*. The labor consists of the general farm work; but I may more particularly observe the planting or dibbling of

wheat, and other corn and root crops, and the hand-hoeing of corn, turnips, &c. The evening education is that of reading and writing, arithmetic, &c., and such religious and other instruction as time and opportunity will admit; in which, as well as in their daily labor, they are superintended by a young man for the purpose, who was four years at the Woburn National School, and six years at the Duke of Bedford's farm, where he also worked in a gang; to which, I may add, that I make it my duty to attend personally each evening to assist.

The enclosed calculations will show the cost of clothes per year and per week, and the cost of food per week, attendance, &c.:—

**CALCULATION OF CLOTHES, MAKING, AND ATTENDANCE: TWENTY BOYS FOR ONE YEAR.**

	£	s.	d.
34½ yards of moleskin, at 1s. 2½d. per yard	2	1	8½
44½ yards cord, at 11d. per yard	2	0	4½
3 yards of canvas, at 7d. per yard	0	1	9
3 gross of buttons, at 1s. 6d. per gross	0	4	6
1½ lbs. of thread, at 2s. 10d. per lb.	0	4	3
160 yards of calico, at 3d. per yard	2	0	0
3½ dozens pairs of stockings, at 9s. per dozen	1	10	0
Shoes and mending, per contract	10	0	0
Making 20 suits, 50 days, at 2s. 6d. per day	6	5	0
Mending, say 25 days, at 2s. 6d. per day	3	2	6
20 pairs of braces, at 6d.; 20 handkerchiefs, at 6d.	1	0	0
78 lbs. of soap, at 5d. per lb.	1	12	6
20 caps, at 2s.; 20 ditto, at 1s.	3	0	0
20 smock frocks, at 4s. 6d. per frock	4	10	0
Attendance	25	0	0
	£62	12	6½

Being £3, 2s. 7½d. per boy, per year; or 1s. 2½d. per week. This calculation does not include the person who works with the boys.

**TWENTY BOYS' KEEP PER WEEK.**

taken at average market prices, as per amount consumed.

	£	s.	d.
3 bushels of wheat flour, at 7s. 6d. per bushel	1	2	6
9½ lbs. of cheese, at 5d. per lb.	0	3	11½
1½ lbs. of treacle, at 4d. per lb.	0	0	6
3½ lbs. of dripping, at 6d. per lb.	0	1	9
35 lbs. of fresh and salt meat, at 6d. per lb.	0	17	6
1½ bushels of potatoes, at 6s. per bushel	0	9	0
3 oz. of coffee, at 2s. per lb.	0	0	4½
	£2	15	7

Or, 2s. 9½d. per week, per boy

Each boy's keep per week - 2s. 9½d.  
Each boy's clothes per ditto. - 1s. 2½d.

Total expense for each boy per week - 3s. 11½d

I shall now proceed to show *some* of the advantages derived from the system, and, in the first place, I may mention, as a general rule, that *their work is much more carefully done than any man can do it, working by the piece, at the prices usually given*, and as shown by annexed statement:—

**COMPARATIVE VALUE OF BOYS' LABOR, WITH PRICES PAID FOR JOB WORK.**

Boys.	Men.
*Wheat planting, 6 or 7 boys at 8d. per acre, 4s. 8d.	Not done in this county.
Wheat hoeing, 6 boys at 8d. per acre, 4s.	Men per acre, 4s.
Turnip hoeing, 5 boys, at 8d. per acre, 3s. 4d. }	Do., 6s. 6d. to 7s.
Ditto, second time, 3 boys at 8d., 2s. }	Do., 3s.
Mangold-wurzel, 6 boys and 1 man plant 5 acres per day, }	Do., 6s.
say 1s. 3d. per acre }	
Cleaning and heaping swedes, 6 boys, at 8d. per acre, 4s.	

You will perceive that this statement is in favor of the boys very considerably.

In planting corn there is a considerable saving of seed, (which will of course vary according to the idea of the farmer, as to quantity required;) the seed is *all in the ground*, and at the required distances apart to admit of hoeing and weeding, and thus it requires

\* Mr. Mechi tells me that in his neighbourhood they pay 11s. per acre for planting wheat.



less harrowing to cover the seed. The hoeing is as perfect as it well can be done by hand, and all the surface is moved—a system which is seldom carried out when it is hoed by the piece. In the turnip hoeing, the plants are at regular distances, and all the surface is moved, so that no weeds escape. I may mention that the judges of swede crops for the Herefordshire Agricultural Society, the season before last, mentioned the cultivation of my swede crop as *the most perfect they had ever seen*; and I believe that in a field of 40 acres a man might have crossed it in six places, and not found six double plants. Of incidental work I need say little more than to remark that, in weeding, collecting couch, collecting turnips and potatoes, making hay, turning barley and other crops at harvest, picking stones from the land, &c. &c., the boys are peculiarly adapted, as these operations do not require strength, but care, and from their size the boys get *so much closer to their work*.

But these are few of the great advantages to be derived. Whilst my boys are learning to be good and skilful laborers, and to get their living, they are rescued from what are too frequently dens of immorality and vice, and are learning their duty towards their God, and their duty towards their neighbor. They are learning habits of cleanliness, and a systematic mode of living, and may be, I trust, the commencement of a better race of men.

You may ask, Is this system appreciated by the laboring class? I should say, most decidedly it is.

I believe, in three months after I had filled up my number, *I had refused as many as sixty applicants*, (some from a distance,) and one poor woman walked 24 miles to get her boy placed with me, but my number was already made up.

There is another great advantage I must not omit to mention, that in keeping these boys *I am consuming my own manufactures*, (wheat, pigs, sheep, &c.,) by which means I have the bran back on the farm; I have the butcher's profit of pigs and sheep; I get the manure (night soil) on the land, and *I keep my capital in my own country* (my farm) *instead of sending it abroad* (i. e., the labor market). I believe I have given you every particular requisite, and I think the calculation very near. The only items I have omitted are milk, (skimmed,) which would otherwise go to the pigs; and garden stuff, which they have when in abundance. The calculation is from Sunday morning till Saturday night, and the boys have lived in the usual manner. The expense may vary, but I believe this is about the average. I have said nothing of the accommodation and expense of filling up, but it is not great. There are also books, &c., which are those generally used by the national schools, published by the Society for the Diffusion of Christian Knowledge; in these a sovereign will go a long way. This and the interest of capital invested in furniture, &c., when divided amongst 20 boys, amounts to very little per week; perhaps in all 2s. per boy.—*Hereford Times*.

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## AGRICULTURAL DINNERS.

### WHY NOT POPULAR IN OUR COUNTRY?

CAN any one give any good reason why we should not have, in our country, as in others, public dinners and discussions, when people have taken the trouble to come together, once a year, from (some times) hundreds of miles to see and be seen—to hear and to be heard—to give and to receive information? The most interesting and instructive portion of the English agricultural journals, is that which gives accounts of toasts and discussions which take place at the public dinners on all occasions of *annual* meetings of agricultural societies in that country. Every topic is brought into review, and a dozen or more of men, distinguished yet more for their scientific knowledge and practical experience, than for rank and wealth, make speeches which serve at once to enliven and enlighten the company and the public; for their remarks are taken down and published for wide and general circulation. The speakers on these occasions have generally the good sense to select topics of admitted interest for the day, and the good taste to *condense* their remarks within a small compass, conveying much that is worthy of note and remembrance, within a quarter of a column of a newspaper. Here, it would seem that we never or rarely mingle the lively with the useful.

Every man is thinking of the "*almighty dollar*." Even some of those who betray unseemly anxiety for a paltry premium, will grudge the fee of admission on the ground; and when the show is over, instead of being publicly toasted for his success, at a public dinner, in a glass of Adam's ale if you will, and publicly called out to offer thanks for the honor of which he has a right to be proud, and to explain for the benefit of all present the means by which he has attained excellence in the department for which he has obtained a premium; you will see him put his five dollars for best "half acre of flax" in his pocket and go away, to see in what obscure house he can get the cheapest dinner—and thus the whole affair, which ought to be one of discussion and conviviality, giving and taking information, and explaining the processes as well as the results of good management—takes an exclusively sober, calculating, money hunting, unsocial turn; and all that is ever known by those who are not in attendance is, that Mr. A., living near, took \$10 for five best ewe lambs, and Mr. B., a "diploma" for best middled wool buck! These remarks have been suggested by the perusal of an account of the proceedings at the public dinner, at a late second annual meeting of the "NORFOLK AGRICULTURAL ASSOCIATION" in England, where more than a dozen men of high eminence as agriculturists and stock-breeders addressed the meeting on various subjects.

On these occasions it is gratifying to see, too, that even the *Clergy* are not too straight-laced to take part, and give an example of anxiety for the progress of agricultural improvement, testifying to its great importance. At the dinner referred to in this case,

"The President, after a pause, again rose, and said, the next toast upon the list was "The health of the Bishop and Clergy of the diocese." Among them, he believed, they had agriculturists and geologists. He believed they were a body of men who did honor to their profession. He thought if the Bishop of Norwich lived a long while, there would be no sinecurists. (Laughter.)

"The Rev. P. Gurdon thanked the company for the great honor they had paid to the bishop of the diocese, and he made his acknowledgments for the compliment to the clergy. He was not ignorant that it was an old custom, and he might almost say a constitutional principle, to introduce the toast so early; and he was aware that it carried with it a two-fold object—it showed unequivocally the mark they set upon the pastoral office; and it clearly indicated to the clergy the important duties which devolved upon them. But he would not debate upon that topic on the present occasion; for he felt too great an interest in the welfare of that society to occupy their time as an humble individual, seeing, as he did, many around him more fully qualified to enter into the various matters and details which he considered they came there more properly to entertain, than to return thanks for compliments; but he could not take leave of them without expressing a hope, an earnest hope, that the clergy of the diocese might ever hold the high place which they had hitherto enjoyed in their estimation. He felt satisfied, as a practical working clergyman, that they could always secure that esteem; and he would use the language of the bishop in returning thanks to the citizens of London for the healths of the clergy; they could always secure that estimation by their talents, their education, and their diligence among the flocks over which they were appointed. (Applause.) He wished they might live long to support the society with that zeal and spirit they had done hitherto, being of the noble lord's opinion, that these associations must tend to the welfare and good of mankind, because they embraced three objects—the first to encourage the researches and the practical skill of the tiller of the soil; the second, to develop the symmetrical improvements in the breeding of those animals upon which the life of man is generally sustained; and thirdly, to bring into public notice the labor, the skill, the ingenuity, and science of the mechanic. He concurred in all that had been said in praise of that great man who had introduced so much zeal and energy into the county of Norfolk; and among the great things he had done, he had not left undone the introduction of machinery into Norfolk. They had seen many of those machines; and he would mention Crosskill's clod-crusher, and Messrs. Garrett's machine for hoeing wheat. When they saw such implements as these, he felt satisfied that societies like the present were for the general benefit of mankind. (Plaudits.)"

Among many other things worthy of note, some remarks were made on

the importance of preserving the *purity of blood* of improved stock as the only means of effecting desirable crosses.

Instead of the toasts all being read by the chairman of the meeting, (sometimes the dullest man to be found at the table,) it seems to be the practice to select particular persons, to whom the prepared toasts are handed, one to each, to be announced; and this is evidently an improvement. The toasts being numbered, they are given in their right order. The health of the judges of particular departments are usually given, and these being men of known experience and judgment, it affords an opportunity for the spokesman of that committee to explain the principles and consideration involved in the case, and thus much valuable information is elicited.

"Mr. E. C. Bailey having read the list of prizes awarded for sheep, Mr. W. Burroughes gave "The healths of the Judges of the Sheep," and regretted that there were not more competitors from East Norfolk. (Applause.)

"Mr. Ellman, of Sussex, [the son, we suppose, of the great improver of Southdown sheep,] said, it would be very bad taste on his part to detain the meeting with many observations on the stock exhibited, after Mr. Torr's eloquent speech. He would, however, take the liberty of making a few remarks, more particularly on the Southdowns. He found he had two most able men as judges acting with him, and he left the Leicester sheep entirely to them. In regard to the Southdowns, he must say, he derived the greatest pleasure from what he had witnessed, and he hoped he was not treading on tender ground, as a Sussex or Southdown man, when he expressed his satisfaction in seeing the Southdowns show much less of the Old Hampshire than they had previously done. Twenty beautiful ewes showed as much Southdown breeding as he had seen for many a day. He could not, for the life of him, see any great merit in those immense heads which some of the sheep had to carry. At one time it was the fashion to breed Southdowns with too much fat and too little lean; and, if he might refer to the Leicesters, the same fault was committed with them. The farmers of Norfolk were indebted for the introduction of Southdown sheep into the county to the late Lord Leicester, whose patronage his father had the honor of enjoying. It was impossible to come into Norfolk without acknowledging that the late earl's patronage had made the county pre-eminent among the agricultural counties of this kingdom. He had been in most of them, and he had no hesitation in saying that he never saw any thing like the skill which he had seen exhibited in Norfolk. He recommended attention to be paid to the pure breed of Southdowns, as, unless it was maintained, it would be impossible to have cross-breeds. In recommending that, he might be supposed to be taking more interest in this county than his own, because most decidedly he would be pleased to see the gentlemen of Norfolk coming to Sussex for Southdown ewes. He believed, that if the breeding in this county was followed up, they would find as good Southdowns in it as in any county of England; and he thought that, at the next Norwich meeting, Norfolk stood a great chance of preventing some of the Southdown prizes going away from it. (Applause.)

"Mr. Bennett, as one of the judges for the sheep, returned thanks, and expressed his opinion that the difference in the merits of the Southdowns and Leicesters was not so great as some supposed; but that form and quality should guide them in their judgment of all animals, whether Southdowns or Leicesters, Shorthorns or Devons. He agreed with Mr. Ellman, that they should keep a pure race of animals; for if they lost sight of the pure breed, where was the cross to come from? He remembered a saying of the old Duke of Bedford, that the first cross was a very good one; but beyond that, all that was good in either breed was lost, and all that was bad of both retained. (Hear, hear.) That was borne out in the practice of a great number of individuals, who had carried crossings of different breeds too far. He had been appointed one of the judges of the Southdown sheep, thirty-four years ago, by the late Lord Leicester, who said he appointed him because the nearer the Southdowns came to the form and quality of the Leicesters, the better. He did not know whether they must reverse the order of things now; and whether Mr. Harvey must not go to Mr. Overman, and get his form and quality, in order to be as perfect as he ought to be. If so, he was quite sure that the spirit, enterprise, and judgment of Mr. Harvey would be quite sufficient to induce him to do so. More skill and judgment were displayed in the improvement of the Southdown than in keeping the Leicesters what they were. *It was much easier to improve a race of animals than to keep up a race that were pretty near perfection.* He cautioned his friends, who were near the top of the tree, to be careful that they did not retrograde; *it required more judgment to keep up a good flock than to get that flock.* This he knew from experience, not only as regarded the Leicester breeds, but every breed of animals."



We apprehend there is much more truth in the remark of "the old Duke of Bedford," than is generally supposed, especially when the further cross is carried on by men destitute of skill and experience. Any one may effect a great and visible melioration by using an improved male for a single cross, but the misfortune is that all the progeny are usually employed in the further work of procreation and improvement, without reference to qualities, and in such cases if degeneracy does not ensue, no further improvement is effected. We once remember, more than twenty-five years ago, to have heard the late Mr. Steenbergen, of Virginia, one of the most sagacious and clear, strong-minded farmers we have ever known, remark that the *first* cross, by an improved male, was *better for general purposes than the full blood!*

But how is that first cross to be had, unless encouragement be given to the breeders of the pure races?

Before closing these very hasty remarks, made with a running pen, we feel it to be our duty to disclaim and denounce all idea of dinner parties anywhere for the low and vulgar indulgence of gormandizing and drinking. When gentlemen want to indulge in mindless revelry, and coarse and senseless jest, which some mistake for wit, the best place is some oyster cellar or third-rate tavern; but for the honor of agriculture we hope such low and coarse indulgence will never be connected with associations for the intellectual improvement of the best and most useful, and if *properly understood and followed*, the noblest calling under the sun. But there is no reason why we should exclude from such associations all idea of rational conviviality and encounter of intellectual force and comparison of practical experience.

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## WHAT IS NEEDED

### TO GIVE TO THE FARMER AND PLANTER OF THE UNITED STATES THE MARKETS OF ENGLAND.

In our last number, page 75, we pointed out to our agricultural readers the mode by which they could secure themselves the great market of England for their grain and flour. We now invite their attention to the following letter from an American gentleman, writing from London under date of July 6th. He says:

"The crop of wheat here, it is thought, will not exceed the usual average; but of potatoes the yield promises to be very abundant, and the prospect for them and for grain is also very good on the continent. I have no doubt, however, that after February next, when the duty ceases, this country will be a constant customer to us for wheat and flour, though the extent of it will be governed by the prices with us; and in ordinary seasons it probably will not be taken to any considerable extent at over \$4 50 a \$5 per barrel."

Let the price of flour be reduced to \$4 50 per barrel, and large quantities will be taken, *unless the price should fall so low in England that it will not be taken at more than \$3 50*. To accomplish this object, nothing is needed but to convert our consumers of food into producers of food, by repealing the present inefficient tariff, and thus depriving the farmer of his present protection. Food will then be low enough for export to England, and then the planter will raise less food and more cotton, and cotton will be so cheap in England as effectually to do away with East India competition. What, then, however, will be the condition of the planter? What will be the value of his land? What that of his hands? Will he then be able to live better or worse? Will he feed, and clothe, and lodge his hands better or worse? Let him answer the question to himself, and in doing so let him for once forget party—if he can. If he will do this, he will say to himself,

that throughout the world the plough has prospered in the vicinity of the loom and the anvil, and throughout the world it has failed to prosper where the loom and the anvil have been very distant, compelling its owner to waste labor and manure in the work of transportation and exchange. Let him then ask himself the remedy, first satisfying himself of the difference between the raising of tons of hay and potatoes to be consumed on the ground, on the one hand, or hundred weights of wheat or cotton, to be sent from the land, on the other.

Since writing the above, we have met with an article from the London Times, on the grain crop of the United States, from which we take the following extract for the information of the farmers of the Union.

"Supposing the above tables to approach any thing like correctness, one conclusion would seem apparent. A considerable surplus of wheat is produced (taking the American crop on the basis of 1847) over the amount required; and *prices must, consequently, decline in all open markets* until they reach a point which will lead to an increase of consumption sufficient to take off such surplus, or until a diminished production shall ensue in consequence of their passing below a remunerating rate."

In the same article is given a list of the open markets of the world—those which export food—and they are Russia, Egypt and Syria, Eastern Germany, Denmark and Sicily—all of them the poorest countries of Europe, those which waste most labor and manure in the work of transportation and exchange, and have least of either to apply to that of production. Such are the countries with which the United States are required to compete, and a belief is confidently expressed by the writer in the Times, that they will do so. That they may do so, all that is necessary is that they should shut up their furnaces and factories and drive the prosperous consumers to the west, there to become poor producers, and they may then, in the words of the Times, "boldly enter into competition with those of any other nation in the great corn market of the world"—even with the Russian boor and the Egyptian fellah. When consumers abounded in Egypt and Sicily, the producers were rich. They themselves consumed largely and had much to spare. The consumers have disappeared and the producers have become poor. They can consume little themselves, and they have little to spare.

### FLANNEL MILLS STOPPING.

"The mills of the Hon. Mr. Hale, at Haverhill, have stopped, in consequence of the great stock of flannels on hand and the limited demand the present season. We understand that the flannel business has paid little or nothing for a year past."—*Lowell Courier*.

WHEN we meet with such notices as the above, and they are now of constant occurrence, we cannot avoid reflecting on the injurious effect to the farmer that results from compelling men to travel west to *raise* food, when they would prefer, if at all possible, to stay at home and *consume* it. Every increase in the ratio of producers to consumers is an injury to the farmer and planter. Every increase in the ratio of consumers to producers is a gain to them—and yet we see farmers and planters throughout the country uniting to sustain a policy that builds up, *at their cost*, cities that are filled with people who live by profits of transportation and exchange. If every county in the Union had its mills, or furnaces, or other places of exchange, as it should have, we should hear no more of mills and furnaces stopping—nor should we witness such rapid growth of cities, while the country was being depopulated, because of the exhaustion attendant upon the cost of transporting and converting cotton and wool into cloth. When will the farmers and planters open their eyes to the fact that protection to the loom and anvil is in reality protection to the plough.

### LIST OF PREMIUMS OFFERED BY THE NEW YORK STATE AGRICULTURAL SOCIETY.

WE have been favored with a list of premiums to be awarded at the next State exhibition at Buffalo, on the 6th and 7th of September. Among others, there are more than fifty premiums offered for "field crops," on spaces limited to "not less than two acres," as the highest minimum, and so down to "half an acre" for others. No premium to be given for winter wheat where the yield has been less than forty bushels—spring wheat thirty-five—Indian corn this year not less than eighty—barley forty—rye forty—oats sixty—buckwheat thirty—peas thirty—beans thirty—potatoes two hundred, and another for not less than three hundred bushels\*—ruta бага (swedish turnip) one thousand—sugar beets five hundred—carrots five hundred—mangel-wurzel five hundred—*best half acre of tobacco, \$5.*

These premiums indicate what the executive committee deem it expedient to promote the cultivation of, in that State, and the quantity which it is presumed they know may be made. It is respectfully suggested that a committee should be appointed to examine the statements of the claimants, and to sift out from them any thing that is really new and economical worthy of being preferred and adopted, over materials and systems already brought to light, by the offer, in ten thousand cases, of premiums for the same objects—for if the end has not been accomplished, by the employment of implements, manures, or processes more economical and labor-saving than are already known and have been heretofore practised and published—then it may be asked, *cui bono?* What good is expected?

The following forms of *Affidavits* prefixed, will show against what sort of habits and practices, and qualities of mind and character, it has been deemed by the executive committee of the state society necessary to guard, by compelling the claimant to "kiss the book."

Forms of affidavits for surveyor, applicant, and assistant are annexed.

The application, with the proofs, must be forwarded to the Secretary, at the Agricultural Rooms, Albany, by the 10th of January, 1849.

#### *Forms of Affidavits for Surveyor, Applicant and Assistant.*

— *County, ss.*—A. B. being duly sworn, says he is a surveyor; that he surveyed, with chain and compass, the land upon which C. D. raised a crop of — the past season, and the quantity of land is — acres, and no more.

Sworn to before me, this — day of —, 184 .

A. B., Surveyor.

—, Justice.

— *County, ss.*—C. D. being duly sworn, says that he raised a crop of — the past season, upon the land surveyed by A. B., and that the quantity of grain raised thereon was — bushels, measured in a sealed half bushel; and that he was assisted in harvesting and measuring said crop by E. F.; and that the statement annexed, subscribed by this deponent, as to the manner of cultivation, expenses, &c., is in all respects true, to the best of his knowledge and belief; and that the sample of grain exhibited is a fair average sample of the whole crop.

Sworn to before me, this — day of —, 184 .

C. D.

—, Justice.

— *County, ss.*—E. F. being duly sworn, says that he assisted C. D. in harvesting, getting out, and measuring his crop of —, referred to in the above affidavits, and that the quantity of grain was — bushels, as stated in the affidavit of C. D.

E. F.

Sworn to before me, this — day of —, 184 .

—, Justice.

\* The Executive Committee, when they fixed this minimum at three hundred bushels, had probably not seen the account by the New York correspondent of the National Intelligencer, of eight hundred bushels! and we forget how many thousand cabbages and other things made and to be made on an acre in New Jersey this year by Professor M., of the *American Institute!*



## THE TEA PLANT,

## ITS CULTURE IN THE UNITED STATES.

As the Chinese and their empire are gradually, from their increasing contact with the Anglo-Saxon race, better known, many prejudices and unfounded opinions, formed for want of knowledge, are exploding and giving place to more just and correct information. A subject hitherto much in the dark, and now but partially understood, is the *Tea Plant*, and its culture. We remember that for years and years, and indeed until within the last few years, we in common with our countrymen thought it was impossible to procure tea plants or tea seed from China; albeit, tea seed occasionally came to this country, brought as a curiosity by a captain or supercargo, but as we never could succeed in making it grow, we took the general opinion for granted, that the Chinese *boiled* it before selling. We also acknowledge that we thought, with that best work that was ever published for general reading, "The Penny Magazine," that it was "only in a particular tract of the Chinese empire that the plant is cultivated; and this tract is situated on the eastern side, between the 30th and 33d degrees of north latitude. The more northern part would be too cold; further south the heat would be too great." These were our old prejudices; but they have given way before better information. The Chinese will not only sell plants and seeds, but they will also hire themselves to cultivate them in a new country. The great English tea companies imported into Hindoostan ship loads of plants, seeds, and Chinese cultivators. Neither is it only in a particular part of China that the plant will grow. It is cultivated in the northern and mountain region, where snow lays on the ground three or four months of the year; it is found wild in Assam, as far south as the 24th degree, and is cultivated in quantities at the foot and on the sides of the Himmaleh mountains. Such being the case, cannot tea be cultivated with profit in the United States? From the best information we can get—from the books and journals of travellers—from conversations with the traders to and returned residents of the tea country, we are fully convinced that the Union, from Texas to New York, will grow tea equal in quality to two-thirds of that imported, and that some of the states will grow it equal to or better than the best that comes from China. The Assam plant would undoubtedly flourish from Florida to the Potomac, but would probably require time and care to naturalize it in the Middle States; whilst in these states the seed from the cold and mountainous parts of China would grow luxuriantly, but would be troublesome to naturalize in the south.

The characteristic observant and inquisitive tone of our countrymen, for which as a nation we have become famous, leads us to believe that there is a great mass of information in the country relative to the growth of the tea plant; and thinking as we do that it is every patriot's duty to render his country, as far as he has the power, independent of foreign nations, we beg those having such information to furnish us with it, that we may spread it before the practical public, and have the experiment of tea-raising tried: and we request our contemporaries, agricultural and daily, to notice the subject, and gather all the facts in their power. If they will do this, and if our traders, merchants, supercargoes, and shipmasters will bring or order home plants and seed whenever it is possible, the child is now born that will live to see the United States *export, instead of import, tea!*

Since the above was partly written, we have learned that there is a young gentleman of our city recently returned from Calcutta, who for five or six

years had the management of one of the company's tea factories (i. e. plantations) in Assam, and that he has written a history of the culture and habits of the tea plant, and the mode of preparing it for market; and has made drawings of all the implements used in its culture and preparation. This gentleman, we understand, has expressed an opinion that this country can and will grow as good teas as any portion of the world.

We know not the size of his work, but if it is not too large we shall be happy to be the means of spreading it before the public, with the necessary wood-cut illustrations.

It is to objects like these that agricultural institutes and societies should turn their attention, and offer premiums for importations and for information. Our officers of the navy have ever been ready to attend to any suggestions from agricultural societies in such cases; indeed many of them have incurred considerable expense in this way, the government having no power, and perhaps less disposition, to make advances for any thing but *military surveys*.

Nations, like individuals, never know what they can do until they try. Look at the history of the cultivation of the olive, now the main support of commerce in some of the provinces of Italy. Pliny informs us that in the year of the city 500, when Appius Claudius and Junius were consuls together, a pound of oil was sold for twelve asses; but that in the year 680, ten pounds of oil were exchanged for only one ass—and that in twenty-two years after that time, Italy was able to furnish the provinces with oil.

If we were governed by a domestic policy, that would nurture every branch and variety of industry and production, corresponding with our almost unlimited variety of climate, soil, and natural resources and capacity, we should soon be making all our own wine and silk, and olive oil and tea: and thousands would be employed in the production and manufacture of these articles, and *consuming* the produce of the plough, who, for want of these various employments, are following at the handles of the plough—swelling its fruits into such masses of abundance that they must rot at home, or be sent abroad to contend, where the Commissioner of Patents thinks they may successfully contend, with the grain produced on the cheap lands of Russia—by the serfs of Russia.

We shall be truly thankful for any practical information illustrating the fitness of our climate for the production of this, or any new and valuable commodity like it, even though the facts we may disseminate may be treated as was the full history we gave *twenty-five years ago*, (*along with the substance itself*,) respecting the use and value of *Guano*.

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## RICHMOND, VIRGINIA,

### ITS ADVANTAGES FOR MANUFACTURING PURPOSES.

A NORTHERN gentleman visiting this region of country, on which Nature has bestowed such eminent advantages, writes thus to the Philadelphia Daily Sun.

*Richmond, Va., July 15, 1848.*

GENTLEMEN:—This is my first visit South; and being particularly struck with the beauty and advantages of this, the capital of the Old Dominion, I have spent a few days in asking questions, and critically examining for myself why it is that this favored spot should have been so long overlooked by the enterprising capitalists among my brother Yankees. I have come to the conclusion that it can be accounted for only in one way, and that is, the *Northern prejudice* that has so long withheld me from a Southern tour.

My short intercourse with the people, and my strict observance of their *peculiar* institution, has already removed all prejudice; and while I contemplate the magnificence of this situation, its central position, its climate, its being at the head of navigable tide water, at the terminus of the James River Canal, in the route of the great Southern Railroad, its tremendous water-power, together with its great agricultural resources. I am wonder-stricken that it is not already one of the first cities in the Union.

This overlooked region presents greater advantages to the manufacturer than any point I have ever before visited. In addition to the advantages of climate, and low price, and abundance of water-power, its vicinity to the cotton-growing country, the great superiority of the Virginia iron, its being the terminus of the Richmond and Danville Railroad, now being located, and the ultimate terminus of the great work proposed through Tennessee to Memphis on the Mississippi, must make it ere long the Lowell of the South, if not the Manchester of America.

There are already in this city several large cotton factories; one woollen factory; several extensive flour mills, one of which is said to be equal, if not superior, to any in the Union; an armory; one cannon foundry; several iron works, rolling-mills, and machine shops; one steel factory; one nail and screw factory; one paper mill, and several saw, corn, and plaster mills. And when it is taken into consideration that those many establishments use but a moiety of the water-power on the one side of the river, what destiny may we not anticipate for a city so favored.

The Richmond and Danville Railroad will commence from their depot—on or near the dock, or shipping point—cross the James River diagonally, as I understand, in a south-west direction, pass under the Petersburg Railroad Bridge near the south abutment; thence up the river, through what are known as *the Falls* and *Spring Hill* properties; thence diverging to the Chesterfield Coal Fields, and in its passage to the south-western terminus, traverse that fertile portion of Virginia watered by the Roanoke and its tributaries.

This road will not only reduce the price of the best article for generating gas known to our chemists—the Chesterfield coal—by affording a cheap and ready transportation, but, after its completion to Danville, near the North Carolina line, and within the cotton region, will open a new avenue to the raw, as well as manufactured material, and thus so add to the already numerous resources of this favored spot, as to give a new impetus to the awakening spirit for manufacturing; and call into requisition that splendid water-power on the Spring Hill and Falls property, opposite the city, which, until recently, has for many years been seemingly overlooked. Beautiful as Richmond is, and numerous as are its advantages, I feel it but due to suggest to such of your readers as business or inclination may lead this way, not to omit visiting Spring Hill. It is certainly one of the most beautiful and best located spots for a manufacturing town I have ever seen. Its water front is about 3000 feet, and within that distance the fall is some 27½ feet. When you think of this, and that you may command at all times water enough to drive a half million of spindles, you will wonder, as I did, that it has not long since been brought into requisition. It has, however, within the last year, fallen into individual hands, who, as I understand, has given evidence of enterprise by obtaining a charter, and is about organizing a company for the full development of the power, and the disposition of privileges and lots.

His first purpose is, as I understand, to induce capitalists of enterprise to visit the spot; that done, I have no hesitancy in anticipating the success of his enterprise, and shall date from it a new era in the industrial prosperity of this portion of the South.

A NEW CORRESPONDENT.

Unfortunately, as we think for the welfare of Richmond and of Virginia, those who have always controlled the policy of the state, and who from that state have generally shared in the direction of the policy of the general government, have belonged to the 'let us alone' school of politicians—a policy that would be very well if ours was the only country in the world, and one in which the members of the confederation belong to one government. One portion should not be taxed or restricted to advance the pursuits of another; but where the intercourse and the contest is between rival nations, does it not seem to be suicidal for one to fold its arms and leave all other nations to regulate their intercourse on such terms as *they* deem best for their own interest? And again, the cry raised against banks and capitalists, and the difficulties thrown in the way of associations to loan money and build factories—denouncing all such as attempts at "odious monopolies"—has had the effect of driving capital from that state into others, where the wisdom of the people and of legisla-



tures has prompted them to offer to capitalists and capital every possible temptation, saying, Come—come, and be welcome.

For how long a time will the people be hoodwinked by demagogues of all parties, in search of power and place? Is not the present a propitious moment to re-establish reason and patriotism in the place so long usurped and held by party prejudice?

### MR. REYBOLD'S ANNUAL SALE OF SHEEP.

TO THE EDITORS.—I made one of a trio, to go by the Napoleon, to Mr. Reybold's sale of Oxfordshire sheep, returning by the Express—both good steamboats, and, what very much helps to make good boats, both under the guidance of polite and attentive commanders. At Mr. Reybold's we found a goodly company of substantial farmers; among them Harry Carroll, of "My Lady's Manor," Maryland, and his neighbor Mr. Jessup. Mr. Carroll had last year provided himself with a buck of Mr. Reybold's breed, and Mr. Jessup was lucky now, in getting No. 10, a choice animal, at a figure somewhere above \$40. Neighbors may, in such cases, advantageously exchange rams for a season, and thus avoid breeding too closely in-and-in. Mr. Reybold is himself cautious to avoid this too common fault, or too common necessity, of American breeders, by sending to England occasionally for a stream of fresh blood, with which to dash that of the progeny of his old stock. He is now expecting another ram from England, for use, this autumn. The sire of his present flock was there in all his majesty, and is a perfect sight in the *ovine* department. In May he weighed some 360 pounds, and no doubt would, if now hung up in the shambles, cut eight inches through the ribs.

The sale went to prove, what I apprehended, that there is not spirit enough among breeders in this country, to keep up, at remunerating rates, annual auctions of improved stock—some ten or twelve only were sold, for from \$40 to \$60. A two-year-old was sold, under private orders, to a gentleman in Virginia for \$80—but *such a sheep!* except his sire, is not to be found every day, in any country. One was sent, under orders from Texas, to Galveston. It is quite probable that every buck in the pen would have been let in England, by the year, for double what their life-estate would bring here. But England takes care that *those who manufacture* for her, shall all live and do their eating within her boundaries. *She* does not send abroad to buy manufactures for which she has all the climate and capacities at home, resources which we possess in glorious abundance, if our commercial policy did not forbid or cripple manufactures in our own country, and thus cut off the market which would otherwise and ought to be supplied to the American farmer, by having the consumers alongside of the producers; if, in a word, the loom and the anvil, the coal mine and the iron-foundry, were kept constantly going near the plough.

It is believed that Mr. Reybold, not finding the encouragement which he ought to have expected from his extraordinary care and outlay in this branch of husbandry, will hereafter sell at private sale, as opportunities offer—which hitherto he has not felt himself at liberty to do, from his obligation to reserve all choice bucks for public auction. But for this reserve, it was said that he might have disposed of all he had on satisfactory terms. Nevertheless, the public may be assured, that he will in no measure relax in his attention to the maintenance of his noble flock, in its present points of excellence;

and those who desire to increase the weight of their sheep, in flesh and wool, and to infuse into their flocks a greater propensity to fatten, on good pastures, will know where to get the impregnating element.

For men whose land is poor, and pasturage poor, and flocks poor, and where all is likely to get from poor to poorer, for want of inquiry and activity of mind and body, on the part of gentlemen proprietors, we have no advice to offer except that they continue to sit in their cool piazzas, with their bottoms on one chair, their feet on another, and, leaning back at their ease, keep on whittling sticks, or reading their party newspapers, until the sheriff comes to—*sell them out!*

All I have to say, in addition, Messrs. Editors, is, that if the use of Mr. Reybold's bucks will ensure such mutton as we found on his table, it would not be easy to name too high a price for them. I do not mean that it was excessively *fat*, which to every man of good taste is a serious objection with all meat—but that it *was* fat, and at the same time juicy and tender; and altogether free from *sheep* flavor. I should like to have known, but neglected to inquire, *how long it had been killed*; for on this point I have my peculiar theory for both fowl and butcher's meat. My persuasion is, that both should be eaten, either *immediately after* they are killed, and if possible before they get cold—or that if they do get *dead cold*, they should then be kept until the fibre begins to give way, in the transition towards putrefaction. Hence it is, let me tell you, for I can—

*How to fry a chicken.*—The traveller, whoever he may be, that ever stopped to breakfast at Mr. Goodwin's, on the Fairfax road going out from Alexandria, will remember how sharp was his appetite on arrival there in the stage, and how by the time he could wash and refresh himself in that way, he was shown into the breakfast room, to refresh himself more substantially with good old-fashioned Virginia *biscuit*, fragrant hot coffee, and a dish of hot fried chickens, as *tender as young partridges!* Well, if he had asked Mrs. Goodwin the *quo modo*—the *how* it happened; she would have told him that when the stage arrived, the chickens were in the coop, from which they were taken all “alive and kicking,” and having their heads wrung off, were instantly disemboweled and washed out with hot (not cold) water, and then quartered and dropped into a pan of boiling lard, (pure sweet lard mind ye,) and were served up hot and dry, not swimming in grease; and thus it is, Mr. Reader, that you get what is worth eating in the way of *fried chickens!* or if you prefer to have them served up with gravy, let it in heaven's name be nice cream gravy—for which too you must not stop this side of old Maryland; and here permit me to enlarge with a line or two to tell—

*How to have lamb or mutton free from the objectionable “mutton” taste.*—If a man were called on to review our early annals in search of the locality and the period, of the most whole-souled, uncalculating, generous hospitality, that ever did honor to any country, he would go back to a time anterior and for twenty or thirty years subsequent to the American Revolution; and running his finger over the map of the old thirteen, he would stop when he came to *the tide-water counties of Maryland, and run it thence along, slowly pointing to the lower country of Virginia and the Carolinas*—dwelling, as he proceeded, particularly on the *Chotank and the James River region of Virginia*—famous for fox-hunting, for card-playing, for dancing, for good old rum-toddy, and for good mutton. What, in fact, that is best in good men, and good living, were not those regions famed for?

In old Chotank lived, among other choice and noble spirits, Colonel LAWRENCE T. DADE, for twenty-five years a member of one or the other

branch of the legislature. At that time, the people, in looking for representatives of the landed interest, did not contract their views down to the narrow microscopic points of modern requirements in politics. They did not ask whether the man was for 49° 30' or 54° 40'. Will he go the whole of my hog, or another man's hog? They looked out for *gentlemen* of intelligence and property, who they knew must be *for their country*, and for which their blood and their property were alike deemed the best security; and felt safe in leaving all the rest to their honor and patriotism. But it is not with Colonel Dade as a politician or lawgiver that I would deal, but as a gentleman of the old school of high-breeding and unbounded hospitality; and with his judgment on two points of great importance in this world of sober realities, where eating and drinking—or as Swift said, buttoning and unbuttoning—constitutes the chief business of life.

It was Colonel Dade's observation, as to the management of lamb or mutton, as well as all other living things to be eaten—that as soon as killed, they should *be instantly disemboweled*. It was his theory that the warmth of the body, carried off by the loss of blood, was for a time supplied from the warmth of the bowels, and that it is the neglect to remove the entrails at once, (and not, as some suppose, the meat being touched by the wool,) which imparts to it that strong "mutton taste," which sometimes spoils the best meat on a palate the least discriminating.

Colonel Dade afterwards removed to Kentucky, and there came in contact with the *great cat-fish* of the Ohio, some of them as heavy as an old field southern bacon hog, running at large, enjoying the largest liberty for sixteen months, and there he observed the same principle to hold good; that the fish too, as soon as taken, must have all the slime washed from its body, and be immediately eviscerated, taking care, as well with fish as with sheep and other animals, never to let the meat be touched by the entrails or their contents.

I hope, Sir, you will not consider these homely subjects unworthy of being treated in a paper, designed as yours is, to give useful information to every class—in every branch of useful occupation—but I must not conclude without a word about—

*The Peach district of Delaware.*—In going to New Castle, you pass in view of that fine peach orchard on the noble estate of Doctor J. W. Thompson, of Wilmington, advertised for sale on the cover of the Plough, the Loom, and the Anvil. On leaving New Castle, wending your way down to Delaware City, you pass some minor orchards, that in any other part of the world would be esteemed large, until you come to that naturally splendid and highly improved district belonging now to Major Reybold and his sons, and sons-in-law, from whose orchards alone, it is estimated will be sent this year 160,000 baskets of peaches to the Philadelphia and New York markets. Delaware City ought to have been called Peach town. You may see there, from this time until the last of September, a line of mule wagons, of peculiar construction, loaded with peaches, extending for a mile—or as long as the line of girls that came out in New England to greet the arrival of the "old Hero," General Jackson.

From these wagons, the steamboats take off 5000 baskets a day, five days in the week, making 25,000 baskets weekly for seven or eight weeks—each basket holding about three pecks. I saw in the boat a Knight of the Thimble, going down from Philadelphia, as he said, to fire out to "pick peaches," as promising more agreeable if not more lucrative employment than handling the goose. Some of these days I will give you a more detailed account of this *peach husbandry*, in its practical and mercantile details. This too is an important variety of industry, which owes its cultivation to the application



of *steam* and the use of coal—enabling the peach grower to send his fruit from the Chesapeake and the Delaware fresh into the New York market. But, sir, can you name any thing so important for agriculture and horticulture as the success of all the other various industrial pursuits, whereby mouths may be created gaping wide for the produce of the garden and the orchard, the dairy and the field, like young robins waiting for worms. Look through all nature, and you see how she has provided *consumers* for every thing she has created; insects to devour fruits and vegetables, and birds to devour insects! So it is conformable to her designs that other employments should provide thriving consumers for all the products of the plough and the spade, and those who favor a policy of government which prevents concentration of the followers of other pursuits, near to and around the plough and the spade, to consume the fruits of agriculture and horticulture, war with nature herself, and would substitute for her orders and designs, the sinister inventions of human policy, always seeking to make the many subservient to the few.

Lastly, in respect to this peach region, you are not to associate in your mind, a poor, light, warm, sandy country, as people are apt to do. Not at all! for here you see noble fields of great extent, covered with rich herbage, on which large herds of bullocks “wax fat and kick,” or fine flocks of sheep, and fields of corn that promise sixty bushels to the acre. At Major Reybold’s I saw one field of swedish turnips of 20 acres beautifully drilled. And then how different has been the conduct of Major Reybold from many rich, old miserly curmudgeons that we know of! Instead of keeping his children in servile expectancy and dependence, there resides the old patriarch in the midst of his sons and sons-in-law, and grand-children, increasing in the midst of abundance, and each head of his family enjoying his separate independence. The old cock seems to delight in hearing the young ones crow, each at a respectful distance on his own walk, all venerating the parents of their existence, the nurses of their infancy, and their exemplars in diligence and industry.

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#### “SHORTNESS OF HANDS,” HOW ACCOUNTED FOR.

*Harvest.*—Last week completed, or nearly so, in this county, a long, laborious harvest, including hay, wheat and oats. Each of these crops have been unusually abundant and of the best quality. The increased quantity of produce, as compared with the last preceding harvest, has doubled the amount of the farmer’s labor in securing it. The increased quantity—a shortness of hands, and the brittleness of the weather, have subjected the farmers to a long and laborious harvest; but their toil is rewarded by the extraordinary quantity and good quality of their products.—*Delaware Co. Rep.*

“The shortness of hands” will always be felt where the pursuits of labor are all of one kind; whatever tends to foster the greatest variety of employments will be found most advantageous to all—and most especially to the farmer and planter, because their operations are simple and require but little experience to perform those of them by which they are most liable to be pressed. Where the loom and the anvil, the saw-mill and the wind-mill, the tanner and the shoemaker, labor in the neighborhood and buy of one another, each can be called upon at a pinch to help the other. There will be seasons of comparative leisure, as well as of business, in the employments of all, occurring at different seasons of the year; and if the farmer would insist on having the loom and the anvil—the ironmonger and the miller, the tailor and the carpenter, come and settle near to his plough—that is, if he will require a system of legislation that will make it most profitable for those who manufacture for him, to be as near to him as possible, in that case, when harvest presses, and his crops are threatened to be overtaken by summer storms and the frosts of winter, he can command help from neighboring

mechanics and artisans, who will be willing to take in payment for their labor a portion of the very crop which that labor has assisted to save from destruction. Look where he will—view his interest and condition in whatever light he may, and the farmer and the planter will see that instead of detracting from the value and diminishing the profits of other branches of industry, the more they prosper the better for him. The Earl of Leicester—otherwise and better known as the great Norfolk Farmer—used to say, that he would like to know that each of his tenants could drink his bottle of champagne every day; and so we say to the farmer and the planter, it would be better for them if every wood-sawyer on the wharves could make money enough to buy their strawberries and their cream every day of their lives.

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### HOW TO RAISE POULTRY FOR MARKET ON A LARGE SCALE.

*American Poultry.*—The following method of rearing and feeding poultry, says Mr. Charles Whitlaw, I had from a Captain Dunn. He had received some hints from the Chinese, and likewise imported all the different kinds of fowls he could get from that and other countries, in order to improve and cross the breed. After many years' experience, he found that the breed produced between the English and the Malay fowls was the best, taking size and flavor, and their being better suited to the climate, into consideration. The severities of the winters at New York require the employment of artificial heat, in order that the hens may lay all the winter, and that chickens may be reared all the year through. The houses for this purpose may be built either of brick or stone, one story high, with wooden roofs, and must be heated by cast-iron steam pipes; their ceilings and walls must be finished with Roman cement, in order to keep the houses free from vermin, which are apt to generate when heat is employed; each house is to be divided into compartments—the first for hatching and rearing chickens, the second for breeding turkeys, the third for ducks, and the fourth for geese. A furnace is to be built at one end, with a steam boiler to hold fifty or one hundred gallons of water, which will heat a house eighty feet in length; the first two compartments must have the steam pipes passed through both rooms, at the bottom of the walls, for hatching chicken and turkey eggs, and they must pass once round the other two rooms, ducks and geese requiring less heat. The boiler must also be so constructed as to steam potatoes, parsnips, carrots, and herbs, which, when cooked and mixed with milk, barley, oats or peas, meal or flour, produce the finest chickens and other poultry. To make the hens lay all through the winter, mix powdered oyster shells and slate, or decomposed schistus, with their food; the lime in the oyster shells is necessary to form the shells of the eggs, and the slate improves the quality and flavor. Those hens are found to lay better flavored eggs which are bred on soils formed from decomposed schistus or granite. By persevering in the above plan, a sufficient quantity of poultry might be obtained to supply London at one-half the prices generally charged, and yet allow a fair profit to the farmers, and an abundant supply of eggs in the winter would always be certain. The finest children I have seen in the United States were fed mostly upon bread, milk, eggs, and poultry. If parents would feed their children in this way, giving them little or no other animal food, they would not be so liable to disease, nor would contagious disorders be so fatal as they are now, owing to the excessive use of animal food, and particularly pork.—*From an English Paper.*

## THE EXPERIENCED BUTCHER.

## CHAPTER I.

*On the Lawfulness of eating Animal Food—On eating Blood—On killing laboring Oxen.*

THE profession of a butcher, and the members of that profession, have commonly been accounted, however deservedly or not, amongst the most coarse and cruel of the human race. If the imputation be just, as they are a numerous body, it may serve the cause of humanity, both in respect to them, to mankind at large, and to the animal creation, to consider the causes which make them so, and to inquire whether cruelty be a necessary consequence of engaging in the profession, or merely accidental; and, if the imputation be unjust, it will be no less an act of justice and humanity to endeavor to remove it, to lay down an impartial statement of the case, and offer such rules and hints for the improvement and conduct of the profession as may appear to be agreeable to reason, and that higher rule for the conduct of man, the Word of God. It is the object of the writer of this little volume to attempt this desirable end; and, as there have been, in all ages of the Christian era, those who have denied the lawfulness of eating flesh, or of taking away life at all for the sustenance of man, it seems requisite to begin with a consideration of that question. Of the writers on this subject of late years, the principal are Oswald, in his "Cry of Nature," Ritson, in his "Essay on Abstinence from Animal Food as a Moral duty," and the compiler of "The Literary Miscellany," in the eighteenth number, containing remarks on the conduct of man to animals, flesh-eating, &c. To these may be added some of our poets, who, in a strain of thoughtless or affected humanity, censure that which they could not prove to be censurable, and which, probably, they practised themselves: among these are Pope, Gay, Thomson, Armstrong, and Goldsmith. Pope, in his "Essay on Man," epist. i. line 81, as a general censure, calls the killing a lamb for food, *riot*;

The lamb thy riot dooms to bleed to-day

Again, Ep. iii. l. 154, he calls the killing animals for food and clothing, *murder*. Speaking of man, in what he calls *a state of nature*, he says,

No murder clothed him, and no murder fed.

And again, l. 161—164,

Ah! how unlike the man of times to come?  
Of half that live the butcher and the tomb;  
Who, foe to Nature, hears the general groan,  
Murders their species and betrays his own.

Gay, in his Fable of the Philosopher and the Pheasants, makes the parent pheasant say,

Sooner the hawk or vulture trust  
Than man, of animals the worst;  
In him ingratitude you find,  
A vice peculiar to his kind.



The sheep, whose annual fleece is dyed  
To guard his health and serve his pride,  
Forced from his fold and native plain,  
Is in the cruel shambles slain."

Thomson, in his *Spring*, laments that "the wholesome herb neglected dies," which is not true, for it is still cultivated as the food of the animal creation, and, to a considerable extent, as the food of man, of whom he says:

——— with hot ravine fired, ensanguined man  
Is now become the lion of the plain,  
And worse. l. 340.

After comparing him with the wolf and tiger, whom he thinks less to be censured, he says,

Shall he, fair form !

Who wears sweet smiles, and looks erect on heaven,  
E'er stoop to mingle with the prowling herd,  
And dip his tongue in gore ? The beast of prey,  
Blood-stain'd, deserves to bleed ; but you, ye flocks,  
What have you done ; ye peaceful people, what,  
To merit death ? You, who have given us milk  
In luscious streams, and lent us your own coat  
Against the winter's cold ? And the plain ox,\*  
That harmless, honest, guileless animal,  
In what has he offended ? He, whose toil,  
Patient and ever-ready, clothes the land  
With all the pomp of harvest, shall he bleed  
And, struggling, groan beneath the cruel hands  
Even of the clowns he feeds ? And that, perhaps,  
To swell the riot of th' autumnal feast,  
Won by his labor ? Thus the feeling heart  
Would tenderly suggest ; but 'tis enough,  
In this late age, adventurous, to have touch'd  
Light on the numbers of the *Samian* sage.

He, however, seems to be aware that the thing for which he pleads, is against the appointment of Heaven, and concludes with,

HEAVEN, too, forbids the bold presumptuous strain,  
Whose wisest will has fix'd us in a state  
That must not yet to pure perfection rise. l. 354—376.

Armstrong, too, in his poem, "The Art of Preserving Health," speaks of the time

——— when the world was young ;  
Ere yet the barbarous thirst of blood had seized  
The human breast B. ii. l. 297.

He had before pleaded,

And if the steer must fall,  
In youth and sanguine vigor let him die. B. ii. l. 62.

\* Dr. Aikin, in his excellent little volume on "The Arts of Life," Letter VII., says: "I shall not attempt to spoil your appetite by interesting your compassion in favor of the victims, or dwelling upon the cruelty of a butcher's shop. You may find some very pretty lines to the purpose in the poet Thomson, who, however, could eat his beef-steak with as good a relish as any man. Treat animals kindly while they live, and never take away their lives wantonly ; but you need not scruple to make that use of their bodies which Nature has plainly ordained."

Here Dr. A. no doubt uses the word *nature* according to Cowper's acceptance :

Nature is but a name for an *effect*,  
Whose *cause* is God. Task, b. vi. l. 223.

And again,

Then, shepherds, then begin to spare your flocks;  
And learn, with wise humanity to check  
The lust of blood. B. ii. l. 291.

Goldsmith makes his Edwin, turned hermit, say,

No flocks that range the valley free  
To slaughter I condemn;  
Taught by that Power that pities me,  
I learn to pity them.

But from the mountain's grassy side  
A guiltless feast I bring;  
A scrip with herbs and fruits supplied,  
And water from the spring.

The amiable and humane Cowper, however, whose pen moved, more than any other poet's, agreeably to the dictates of reason and religion, while he has pleaded for the brute, has not intrenched upon the liberty of man, and has acted as the arbiter between man and beast:

On Noah, and in him on all mankind,  
The charter was conferr'd, by which we hold  
The flesh of animals in fee, and claim  
O'er all we feed on, pow'r of life and death.  
But read the instrument, and mark it well:  
The oppression of a tyrannous control  
Can find no warrant there. Feed, then, and yield  
Thanks for thy food. Carnivorous, through sin,  
Feed on the slain, but spare the living brute. *Task*, b. vi. l. 450, &c.

That the *grant* to Noah continues in force under the Gospel, may be collected from the following considerations, made by Mr. Plumptree in the second of his "Three Discourses on the Case of the Animal Creation, and the Duties of Man to Them:"

"1. Before I mention our blessed Lord himself, I will just notice that remarkable instance of abstemiousness, John the Baptist, the 'Elias who was for to come,' Matt. xi. 14, and who might be said, comparatively speaking, to have come 'neither eating nor drinking,' v. 18, whose food was '*locusts* and wild honey,' Matt. iii. 4; his life, therefore, was sustained by the labor of the bees and the death of the locusts.

"2. Our blessed Lord, '*by whom* are all things,' Rom. viii. 6, and who, when upon earth, 'did no sin, neither was guile found in his mouth,' 1 Pet. ii. 22, and who would neither 'break the bruised reed, nor quench the smoking flax,' Isaiah xlii. 3; Matt. xii. 20, scrupled not to partake of the *usual* entertainments of those times, at which, no doubt, according to the custom of the Jews, there was flesh. So much did he frequent and partake of them, that the Pharisees, in reproach, called him 'a gluttonous man,' Matt. xi. 19. At the feast given by Matthew, the publican, on his quitting his profession, Matt. ix. 10, 11, and at the marriage feast in Cana, he probably partook with others of 'oxen and fatlings,' John ii. 1—11; Matt. xxii. 4. In the parable of the Prodigal Son, mentioned as a type of the rejoicing in heaven on the repentance of a sinner, the *fatted calf* is killed for the entertainment, Luke xv. 23. And again, at the marriage supper of the king's son, another likeness of the kingdom of heaven, we hear expressly of the 'oxen and fatlings' being 'killed,' Matt. xxii. 4.

"Of the paschal lamb he partook along with his disciples, who were most of them fishermen by trade, an employment which consists in the taking away of life for the sustenance of man. Upon two occasions, he

brought a multitude of them miraculously to their nets, Luke v. 1—11; John xxi. 1—14; and these were probably their common food, as we find they had fishes with them upon those occasions, when Christ miraculously increased them, together with the bread, to give food to fainting thousands, Matt. xiv. 15—21; Mark vi. 35—44; Luke ix. 10—17; John vi. 5—14. Of fish also he eat, even after his resurrection, Luke xxiv. 42; John xxi. 29. He mentions also, without any censure, the ‘two sparrows sold for a farthing,’ and the ‘five for two farthings,’ which were probably sold as food.

“3. Under the law of Moses, and indeed long before that, in the time of Noah, certain animals had been forbidden to be used by man as food, under a distinction of *unclean* and clean animals. But, under the Gospel, even this is done away; for, when St. Peter was at Joppa, and at prayer upon the house-top, ‘and he became very hungry, and would have eaten: while they made ready, he fell into a trance, and saw heaven opened, and a certain vessel descending unto him, as it had been a great sheet, knit at the four corners, and let down to the earth, wherein were all manner of four-footed beasts of the earth, and wild beasts, and creeping things, and fowls of the air. And there came a voice unto him—Rise, Peter; *kill and eat*. But Peter said, Not so, Lord; for I have never eaten any thing that is common or unclean. And the voice spake unto him again the second time, What God hath cleansed, that call not thou common. This was done thrice, and the vessel was received up again into heaven,’ Acts x. 10—16. Here permission is given to kill and to eat animals of all kinds. St. Peter again, in his 2d Epistle, speaks of the ‘brute beasts’ as being ‘made to be taken and destroyed,’ ii. 12. And, afterwards, when the disciples at Antioch had some scruples as to the necessity of observing many parts of the Mosaic law, and sent Barnabas and Paul to Jerusalem, to consult with the other apostles on the subject, their determination was, ‘That ye abstain from meats *offered to idols*, and from *blood*, and from things *strangled*,’ Acts xv. 29. And St. Paul, in the 10th chapter of his 1st Epistle to the Corinthians, advises them, ‘Whatsoever is sold in the shambles, that eat, asking no questions for conscience’ sake. For the earth is the Lord’s and the fulness thereof.’ ‘If any of them that believe not bid you to a feast, and ye be disposed to go; whatsoever is set before you eat, asking no questions for conscience’ sake.’ ‘Whether therefore ye eat or drink, or whatsoever ye do, do all to the glory of God,’ v. 25—27, 31. And he says also, in another place, that ‘the kingdom of God is not meat and drink;’ that is, that these, however necessary and desirable, are not the great objects of life, ‘but righteousness and peace, and joy in the Holy Ghost,’ Rom. xiv. 17.

“4. But St. Paul goes further, and informs us, in the 4th chapter of his 1st Epistle to Timothy, that the commanding to ‘*abstain* from meats’ is ‘a departure from the faith.’ ‘Now the Spirit speaketh expressly, that, in the latter times, some shall *depart from the faith*, giving heed to seducing spirits and doctrines of devils; speaking lies in hypocrisy, having their conscience seared with a hot iron; forbidding to marry, and *commanding to abstain from meats*, which God hath created to be received with thanksgiving of them which believe and know the truth. For every creature of God is good, and nothing to be refused, if it be received with thanksgiving; for it is sanctified by the Word of God and prayer,’ v. 1—5. These passages are abundantly sufficient to satisfy any one, who believes in the word of God, and will take the trouble to consult it, that the eating of flesh is lawful.



"The *frequency* and *measure* of this, however, is another question, and must rather be determined by convenience, and by the physician, upon considering the constitution of each individual. I believe, however, that it may be said, in general, that those who have the means of eating animal food, commonly eat too much. Were the rich to eat less, and the poor enabled to procure more, both classes would be the better for it. In particular constitutions and tempers, as, for instance, the irascible, an entire abstinence, or nearly so, from flesh and fermented liquors, might be advisable. Instances have been known of angry tempers being cured by living upon the food assigned to our fathers of the world before the flood—the herbs and fruits of the earth. Let it be observed also, that, when animal food is rendered what is called *high*, either by putrefaction, or preparation, its ill-effects are increased; and that all *waste* of meat, by reducing a large quantity into a small portion of *essence*, is, no doubt, a *sin*."

On the *Prohibition of Blood* it seems necessary to say a few words. Stackhouse, in his "History of the Bible," vol. 1, book ii. chap. 1, Dissertation 1, has considered the subject at some length. Those who may wish to see the arguments on both sides, may consult the original, the result of his inquiry is sufficient for this place: "Unless we are minded to impair the authority, and sap the foundation of revealed religion, we must allow the decree to be still in force, and the command, which prohibits the eating of blood, still chargeable upon every man's conscience. A command, given by God himself to *Noah*, repeated to *Moses*, and ratified by the apostles of *Jesus Christ*; given immediately after the flood, when the world, as it were, began anew, and the only one given on that occasion; repeated, with awful solemnity, to *the people*, whom God had separated from the rest of the world to be his *own*; repeated with dreadful denunciations of divine vengeance, upon those who should dare to transgress it; and ratified by the most solemn and sacred council that was ever assembled upon earth, acting under the immediate influence of the Spirit of God; transmitted from that sacred assembly to the several churches of the neighboring nations by the hands of no meaner messengers than two bishops and two apostles;\* asserted by the best writers and most philosophic spirits of their age, the *Christian apologists*, and sealed with the blood of the best men, the *Christian martyrs*; confirmed by the unanimous consent of the fathers, and revered by the practice of the whole *Christian* church for above three hundred years, and of the *eastern* church, even to this very day," p. 162, 163.

He afterwards says, "though this prohibition of eating blood can hardly be deemed a commandment of *moral* obligation, yet is it a *positive* precept, which cannot but be thought of more weight and importance, for being so oft and so solemnly enjoined; that, though the reasons alleged for its injunctions are not always so convincing, yet the prevention of cruelty and murder, which is immediately mentioned after it, will, in all ages, be ever esteemed a good one; and, though the liberty granted in the Gospel seems to be great, yet can it hardly be understood without some restriction," p. 163.

In concluding this chapter, it seems desirable to say something on the subject of killing the laboring oxen for food. Thomson and Armstrong have spoken against it in the passages before quoted; and Mr. Young, in his "Essay on Humanity to Animals," chap. 1, p. 27, says: "Amongst the Athenians and many other nations, in very ancient times, it was held unlawful to kill the ploughing and laboring ox, either for

\* Gen. ix. 4; Lev. iii. 17; vii. 26; xvii. 10, 14; xix. 26; Ezek. xxiii. 25; Acts xv. 29.

sacrifice or food.\* I cannot help doubting whether it would not have been for the honor and even the advantage of mankind, if this sentiment had continued to retain its influence in later ages. I could wish it to be considered, whether the loss of food, which would have arisen to mankind from abstaining from the flesh of the ploughing and laboring ox, would not have been compensated by the increase of humanity, which would have arisen from an abstinence of that nature."

On this, it may be said that the law of Moses, which was so tender to animals, Exod. xxiii. 4, 5, 12; Deut. xxii. 1—4, 6, 7, 10, and especially to the laboring ox, Deut. xx. 4, makes no prohibition of the kind; and it appears from the case of David, 2 Sam. xxiv. 22—25; 1 Chron. xxi. 25, &c., and from the case of Elisha, 1 Kings xix. 21, that there was no scruple with the Jews on this head. Nor do I consider it as being more cruel to kill the laboring ox for food than to allow it to lead a lingering old age; but should consider the making it to cease from its work, while yet in strength, and allowing it *rest* and abundance of food to fatten, to be rather an act of mercy. The not using oxen more in agriculture, but using horses in their stead, which, after their work is over, afford no sustenance to man, seems to me to be a waste of food. Nor does it seem to me to be more cruel to kill for food the ox, which has been the companion and sharer in the laborer's toil, than to eat the poultry reared by our own hands. It does not appear, that, if the poor man himself, mentioned by Nathan in his parable, had taken his "little ewe lamb, which he had brought and nourished up," which "grew up together with him and with his children," which "did eat of his own meat and drank of his own cup, and lay in his bosom, and was unto him as a daughter," 2 Sam. xii. 3, and killed it, that *he* would have been considered as having had "no pity." The great object in our conduct towards animals seems to be, *mercy in life, mercy in death.*

### THE PIKE.

THE Pike, commonly called Jack when under three or four pounds in weight, is a well-known fish; like many of us, better known than trusted or treated. He is a greedy, unsociable, tyrannical savage, and is hated like a Bluebeard. Everybody girds at him with spear, gaff, hook, net, snare, and even with powder and shot. He has not a friend in the world. The horrible gorge hook is especially invented for the torment of his maw. Notwithstanding, he fights his way vigorously, grows into immense strength, despite his many enemies, and lives longer than his greatest foe, man. His voracity is unbounded, and, like the most accomplished corporate officer, he is nearly omnivorous, his palate giving the preference, however, to fish, flesh, and fowl. Dyspepsia never interferes with his digestion; and he possesses a quality that would have been valuable at La Trappe—he can fast without inconvenience for a se'nnight. He can gorge himself then, to beyond the gills, without the slightest derangement of the stomach. He is shark and ostrich combined. His body is comely to look at; and if he could hide his head—by no means a diminished one—his green and silver vesture would attract many admirers. His intemperate habits, however, render him an object of disgust and dread. He devours his own children; but, strange to say, likes better (for eating) the children of his neighbors. Heat spoils his appetite; cold sharpens it; and this very day (30th December, 1846) a friend has sent me a gormandizing specimen, caught by an armed gudgeon amidst the ice and snow of the Thames, near Marlow. I envy the pike's constitution.—*Handbook of Angling.*

\* Potter's Grecian Antiquities, book ii, chap. 4.

## FARMING IN MARYLAND.

WE do not doubt that in Maryland there is vastly more of intellectual investigation applied to agriculture than there was thirty years ago. We of course remember when there was no such thing thought of as an agricultural paper, whereupon we determined, as far as we could command the means, to supply a defect so discreditable, as we considered it, to those concerned in the great occupation which lies at the foundation of all others.

Essays appeared occasionally in the newspapers of the country, and were read with avidity by all men eager for that most covetable of all things—knowledge; but no one thought of a regular organ, or channel, for conveying information as to the practice, much less the *rights* of agriculture. In behalf of the latter, even now, most of our journals are as dumb as so many fish. Among the papers that made a stir throughout the agricultural community in the South, and evinced an honourable eagerness to learn what the best experience had taught to be best, were the papers of *Arator*, from the pen of Col. John Taylor, of Caroline, published originally in a Georgetown (D. C.) paper. It is believed there was then no paper published in Washington. Since that time, hundreds of pens, and thousands of heads, have been employed in agricultural discussions, until a knowledge of what is most safe and profitable in the mere processes and implements of agriculture, is widely diffused; and what, as we have elsewhere said, the cultivator of the soil now most needs to know, and therefore what he should most especially study to find out, is, how shall labor be made to do well in *other pursuits*, to create a demand for every variety of produce to which agricultural and horticultural labor can be applied? and how shall the market, to be thus created, be established in the nearest vicinity to the plough, and be made most reliable? These are the real and true questions now for the practical farmer and planter, and hence do we endeavor to manifest our sense of duty, by endeavoring to show, not merely how the heaviest crops can be made with the least cost, but how much the profit of *American* husbandry must depend on the prosperity of *American labor*. We want to find, and we want our readers to learn, how concentration is to be made to take the place of dispersion. When a state of things exists that children are seen to settle around their parents; that the son of one neighbor marries the daughter of another, and the son of that other marries his brother-in-law's sister, and grandchildren and great-grandchildren are dandled on the knees of the old people, then may we be sure there is something wholesome and prosperous in the social and political condition; but when sons, as fast as they grow up, are seen to move off to Wisconsin and Iowa, to Arkansas and Missouri, or to seek clerkships at Washington, and the old tenements are getting full of old maiden daughters, we may be as sure there is something unnatural, "something rotten in the state of Denmark." It is only where population concentrates and thickens, that lands are progressively improving. All the premiums that can be offered will never improve the face of a country generally, where churches and meeting-houses are filled with old maids. But to return to our starting point, the progress of improvement in Maryland has been, it is apprehended, rather in patches and on particular estates, than universal, and resulting from well-rooted and widely-extending influences. Thus, while the whole Eastern Shore of Maryland has been stationary, for forty years, in population; while the marriages are few, and the children not increasing, there are instances of individual intelligence and energy, and improved knowledge of agriculture, under the influence of which farms have been made to more than double their former produce, proving the effect as well of the judicious application



of capital and labor, as of superior management generally. Take Talbot county, for example : with an easy navigation almost to every man's door, her population, in 1820, was 14,387 ; in 1840, it had sunk to 12,090—loss in twenty years, 2319. At that rate, how long would it take to extinguish the whole seed, breed, and generation ? and that in a country which every one knows, who knows any thing of its inhabitants, is not excelled in the Union for general intelligence, and especially for intelligence in the prosecution of their chief pursuit—grain-growing. Does not this show that something else, besides the knowledge of ploughing and hoeing, and sowing and reaping, is necessary to prevent dispersion ? to give life and cheerfulness, animation and hope ; to keep the sons at home, and to get husbands for the daughters ? What is that something ? Does not the farmer know that if a mistaken policy forces us to go abroad for manufactures, fabricated by people who eat the produce of other countries, that all those of our own country, who ought to be employed at home in driving the loom and working at the anvil near to his plough, and all foreigners coming to our country, with their capital and their trades, will be forced to throw up the shuttle, and to throw down the hammer, and travel out to the cheap lands provided for them by the *old states*, on railroads and canals built by the old states to carry them there at the least possible expense ?

Col. Lloyd, for example—and there need be no better example as a man or a farmer—makes this year, probably, on his portion of his father's estate, double as much wheat as the governor made on his 14,000 acres, yet it will probably not bring him as much money. The colonel is among the last who need to be told that the native and the foreigner are growing wheat against him, on cheap lands in the west, at a rate so cheap as to require him to make three for one to keep way with them. How then must it be with those who grow wheat in the old states, subject to fifty and one hundred miles of land transportation ? Is it not obvious that whatever shuts up the coal-mine, and puts out the fire in the furnace, and stops the loom, and stills the sound of the hammer on the anvil, drives those who are delving in the mines, and working in the founderies, and throwing the shuttle, and lifting the hammer, to go where they can get land for nothing, and make a bare subsistence with the least amount of capital and labor ; thus not only ceasing to eat the farmer's wheat and his corn, his bacon and his mutton, but producing all these in superabundance for themselves ? Who, then, is his greatest friend—he who tells him what he knows already, that is, how to make poor land rich, or he who endeavors to bring about such a state of things as will reward him for enriching his land, and afford him a good and steady market of consumers close at hand ?

Take Queen Anne's county, in the same state, for another instance. There too, the population, in 1820, was 14,952, and in 1840 it had sunk to 12,633. Does any one believe this retrograde movement is the result of any want of intelligence ? Here too, we understand, that a son of our lamented friend, Col. Emory, has very greatly increased the crops on that part of the paternal estate which has fallen under his management. Blakeford, the beautiful estate of the late Governor Wright, (another true friend in days long gone by,) presents another example of great value, as it proves that capital will tell, when used with sagacity and fearlessness, in *agriculture*, as it has under the same mind in commerce. The crop of wheat, which, under former owners, perhaps never reached an average exceeding fifteen bushels, went this year up to, and perhaps something above, twenty-five to the acre, which sold for \$1 12 per bushel, more than \$28 to the acre, or yielding from that part of the farm the interest on more than \$400 to the acre. The corn crop will be as large and as much increased in proportion.

Hence it is not by lessons in practical agriculture, let us repeat, that such neighborhoods need to be informed, so much as they require to be told how those who take our *money* for their manufactures can be forced to come and manufacture so near our ploughs as that it shall be their interest to take pay in the wheat and the corn of us, who buy their slops and haberdasheries, and coal, and earthen, and glass, and hardware, and cutlery, and iron, and leather, and linen manufactures, and plate, and salt, and tin, and pewter, and silk, and woollen, and small wares, all of which should be made in our own country.

We have referred to farmers and to crops of which we have heard by accident, and that occur to us at the moment. We know enough personally to say, that if we wanted practical knowledge of agriculture generally, especially in the production of the cereal crops, there is no place to which we should repair with more confidence than to the very counties whose population, with all their natural advantages, has been thus diminishing. There can be no want of either enterprise or intelligence, where such men as the Goldboroughs, the Martins, the Stevens, the Hambletons, the Lloyds, or the Carmichaels, Chambers, and Emorys reside. Still, there stand the "fixed facts" staring us in the face—young men moving away, while young women remain single, though so charming that no change could improve them, except—change of name!

Finally, to help the reader, as it has helped us, to understand what had been mysterious in respect of the condition of the old states, we entreat him to peruse and ponder the following extract,

### ON THE BENEFICENT EFFECTS OF A POLICY THAT PROMOTES CONCENTRATION,

From Carey's Past, Present, and Future.

THE great prosperity of the people of the United States is uniformly attributed to their abundance of fertile soils. They have been supposed to be receiving wages for their labor, *plus* the excess that elsewhere would be absorbed as rent. Forced, however, to squander their labors over the poor soils of the west, and to use a vast amount of the inferior machinery of exchange, they appear to have been receiving only wages *minus* the profits of the capital which has been wasted in subjecting to cultivation poor soils, when fertile ones were at hand waiting the demand for their products. The rich meadow-lands of Pennsylvania and of various other States have remained covered with timber, while thousands have sought the west, there to commence the work of cultivation on dry prairie-land upon which trees will not grow; and to obtain from an acre of land thirty or forty bushels of Indian corn that must be converted into pork before it can reach a market, distant thousands of miles: whereas, by the careful cultivation of the better soils of the older States, their labor might have been blessed with returns far greater. An acre of turnips in England is made to yield twelve or fourteen tons. Acres of potatoes yield frequently almost as much; whereas an acre of prairie-land yields but a ton of Indian corn, the most productive of all grains. The meadow-land of Pennsylvania is not worth the cost of clearing, because the market for its products has no existence: and until the consumer shall place himself side by side with the producer, it can have none. Place him there, and then nothing will be lost. The rich soils will give forth their products, and the refuse will remain on the spot, to go back into the ground: and thus the produce of the rich will fatten the poor ones. The land round cities is valuable, because the soil gives forth its produce by tons: not bushels.

An acre of potatoes will outweigh a dozen acres of wheat, and its refuse will fertilize an acre of poor soil; but from the produce of an acre of wheat sent abroad to be exchanged, nothing goes back upon the land. We see everywhere that when furnaces are built, coal mines opened, or mills established, land in the immediate vicinity becomes more valuable: and it does so because when the consumer and the producer come together, man is enabled to compel the rich soils to exert their powers in giving forth the vast supplies of food of which they are capable, and to pay them back by giving them the whole refuse: and until they do come together, nothing can be done. To render the meadow-land worth the cost of clearing, the farmer must have a market on the ground for his milk and cream, his veal and his beef. If compelled to convert the milk into cheese, giving the refuse to his hogs; and to drive his lean cattle to market: sending also to distant markets the food they would have consumed in the process of being fattened, and thus losing altogether the manure: the land is but little more valuable than the prairies of the west, always to be had at the minimum price of a dollar and twenty-five cents an acre: whereas to clear the trees and stumps and level the ground might cost twenty dollars: and hence it is that men fly from rich soils to poor ones. The people of the United States are now scattered over a million of square miles, and over that vast surface they have been forced to make roads, and to build court-houses, schools, and churches: whereas, had they been permitted to follow the bent of their inclinations they would not, at this time, have passed the Mississippi. The tendency of man is to combine his exertions with those of his fellow-men; and when we find him doing otherwise the cause will be found, invariably, in the existence of some essential error in the course of policy. Self-interest prompts him to this union. He feels that two, ten, or twelve, acting together, can accomplish that which would be impossible to a thousand men, each acting alone: yet is he seen flying off to the wilderness, abandoning his home, his parents, and his friends, while meadows uncleared exist in unlimited quantity, soliciting his acceptance of their gifts. To produce an effect so contrary to the laws of nature, a powerful repulsive force must exist. It does exist, and the extent of its power may be measured by an examination of the condition of the adjacent province of Canada. Concentration therein is impossible. The man who should undertake there to establish a work of almost any description, would inevitably be ruined by the perpetual fluctuations of the English system.

But a few months since, the prices of cotton cloths were high. Now, the mills are closed, and a single town exhibits twelve hundred houses unoccupied. The cotton manufacturer of Canada would be ruined. Three years since, the price of iron was low, because peers would permit but few railroads to be made. Now, it is high, because they have permitted the formation of roads innumerable. A month hence railroad building may stop, and then the world will be flooded with iron,\* and foreigners will be ruined. Against such revulsions, the product of a system that is to the last degree unsound, the people of the British provinces have no protection. Ministers are omnipotent: Parliament is omnipotent; and the Bank is omnipotent. They make war or peace: grant or refuse railroads: make money

\* So it has already happened, almost before the author had time to revise his proof sheets. Last year iron was \$40 80 per ton—now it is down to about \$28, and those in our country who were last year employed in making iron and consuming the products of the plough, must next year be at the handles of the plough, augmenting yet more the redundant products of the land, until the farmer shall become so badly paid and so poor, that he may at last justify the assertion of Mr. Burke of the Patent Office, and undersell the Russian serf in the Liverpool market.—*Edits. P. L. & A.*



abundant or scarce, at their pleasure; and the poor colonies must bear all; and hence the utter worthlessness of land, as is shown by the occurrences of every day.\* Railroads and canals are made with government assistance, but they are almost unused, and so must they continue to be, until the people shall acquire the power of self-protection: or until England shall have learned to obtain her own food from her own rich soils, and to permit those who occupy the other portions of the earth to consume, on the ground on which it is produced, their own food, returning to the soil its refuse: and thus facilitating the construction of the great machine, and the development of all its wonderful powers.

From first to last we may see in the great fathers of our country a full belief that the proximity of the consumer and the producer was essential to the promotion of agriculture. They had seen the effects of provincial government. They had been in the situation in which Canada now is placed, and they had felt its hardships. The people of that province are poor, and so must they remain pending the existence of the system: because, while it lasts, they must continue to scatter themselves over the poor soils. *There* [as in some places nearer to us] great men are numerous. They are busily employed in governing the poor and scattered little men, and paying themselves: as they will continue to do, so long as the power of concentration on the rich soils shall continue to be denied. The abundance of land is said to be the cause of American prosperity, but Canada has land in greater abundance, and yet she is too poor to make a road: too poor to keep her own people, who are now deserting her capital to open houses of trade in New York: too poor to keep the unhappy immigrants from Ireland: while the ever-growing wealth of the Union, blessed as it has heretofore been with peace, has furnished means of employment for all that came direct from the British Isles and from Europe at large, and all that overflowed from Canada; and having received them, has placed them at once in a situation to obtain, if they would, houses, lots, and lands: *homes of their own*.

The right of resistance to wrong is inherent in every man: and every

\* "By describing one side of the frontier, and reversing the picture, the other would be described. On the American side, all is activity and bustle. The forest has been widely cleared: every year numerous settlements are formed, and thousands of farms are created out of the waste; the country is intersected with common roads, &c. \* \* \* On the British side of the line, with the exception of a few favored spots, where some approach to American prosperity is apparent, all seems waste and desolate. \* \* The ancient city of Montreal, which is naturally the capital of Canada, will not bear the least comparison, in any respect, with Buffalo, which is a creation of yesterday. But it is not in the difference between the larger towns on the two sides that we shall find the best evidence of our inferiority. That painful but most undeniable truth is most manifest in the country districts through which the line of national separation passes, for a distance of a thousand miles. There, on the side of both the Canadas, and also of New Brunswick and Nova Scotia, a widely scattered population, poor, and apparently unenterprising, though hardy and industrious, separated from each other by tracts of intervening forests, without towns or markets, almost without roads, living in mean houses, drawing little more than a rude subsistence from ill-cultivated land, and seemingly incapable of improving their condition, present the most instructive contrast to their enterprising and thriving neighbors on the American side. \* \* \* Throughout the frontier, from Amherstburgh to the ocean, the market value of land is much greater on the American than on the British side. In not a few parts of the frontier this difference amounts to a thousand per cent. \* \* \* The price of land in Vermont and New Hampshire, close to the line, is five dollars per acre, and in the adjoining British townships, only one dollar. On this side of the line, a very large extent of land is wholly unsaleable even at such low prices, while on the other side property is continually changing hands. \* \* \* I am positively assured that superior natural fertility belongs to the British territory. In Upper Canada, the whole of the great peninsula between Lakes Erie and Huron, comprising nearly half of the available land of the province, is generally considered the best grain country of the American continent."—*Lord Durham*.

man and every nation may be at times compelled to resort to war in self-defence. War is an evil, and so are tariffs of protection: yet both *may* be necessary, and both *are* sometimes necessary. But for universal resistance, the corn-laws would still exist, and the land-owners of England would not yet have felt the necessity of looking towards home. Concentration is now advancing in the United States because the interferences of England are diminished, and thus we see mills slowly rising throughout the Southern States, filled with black operatives. Planters now raise the food required for their hands, and ploughs and other agricultural implements are made at home; and hence it is that the overcharged markets of the world are relieved of the surplus cotton, and that the planter obtains for a crop of two millions more than could have been yielded by one of three millions. With a large crop freights are high, and the machinery of exchange absorbs a large proportion of the small price obtained abroad. With a small crop, freights are low and prices abroad are high; and the planter obtains a large reward, enabling him to clear and drain his rich soils. He is placing the consumer by the side of the producer, and with every step in this course he will obtain increased returns from a diminished surface. With each, he will improve his own condition, while the labor of those by whom he is surrounded will become daily more valuable: and with each, there will be seen an increasing tendency to improvement in their physical, moral, intellectual and political condition.\* If we now turn our eyes to Pennsylvania, we see the same results. To bring into activity the coal mines of the eastern portion of that State, has required an expenditure of \$50,000,000, by aid of which they now send to market three millions of tons of coal, worth \$6,000,000: all of which is expended on the spot, in payments to laborers employed in mining coal, constructing engines, and building houses. Small as is, as yet, the result, it has doubled the value of every farm, over hundreds of thousands of acres. The farmer has now a market for his timber, and he clears his rich lands with profit to himself from furnishing wood to be used in propping mines, building boats, laying railroads, and building houses. He has a market for his cabbages, his turnips, and his potatoes; his veal and his beef; and he is thus gradually acquiring power to force out from the great treasury of food what nature intended it should give forth: and that power is consequent upon the fact that men have come to eat it. Close the mines, and he must raise wheat to compete with the product of the dry lands of western prairies: and at once must his lands decline in value. To accomplish thus much required a vast sum: but, as we have already seen, in every operation connected with the fashioning of the great machine, the first cost is the greatest. The land that yields coal yields also iron ore. A hundred furnaces would produce five hundred thousand tons of iron, worth, at the price in England, \$12,000,000, or twice as much as the present yield of coal:† and yet these hundred furnaces, that would bring to the producer twice as many mouths as does now the coal, would cost but \$3,000,000. Why, then, are they not built? Capital abounds for every purpose, and iron which should be sold for fifteen dollars, commands thirty dollars: and yet furnaces are built but slowly. The reason is to be found in the fact that every species of manufacture is a lottery, and will so continue while the policy of England remains unchanged. The furnace-builder must calculate upon paying himself in a year or two, and so much time may not be allowed him. Even at this moment, the increasing difficulties of the times may have caused the abandonment of great lines of roads, diminishing the demand for iron, and lessening the price one-half: and

\* On our friends in Georgia and the Carolinas these truths will not be lost.—Eds. P. L. & A.

† Or more than double our average exports from 1840 to 1846.—Eds. P. L. & A.

if so the furnaces and rolling-mills of Pennsylvania may be closed.\* Pending the existence of this state of things in a nation possessing the power that is wielded by England, all operations of trade or manufacture requiring large expenditure, must continue to be mere gambling; and, as a necessary consequence, they must continue to be monopolized by the few who can afford to incur large risks for the chance of large profits: and those are not the men who work most economically. When the manufacture of iron shall become safe, it will fall into the hands of working men: and then iron will be cheap. While such fluctuations shall continue, all operations in agriculture must likewise continue to be attended with great vibrations, consequent upon the changes of English action. At one time, cabbages and potatoes will find a market on the ground, as in parts of the country now they do. At another, they will rot in the ground for want of a market, as some years since they did.

The tendency of the whole system of the United States, is that of taking from the great machine all that it will yield, and of giving nothing back: and that tendency flows necessarily from the want of power over their own actions. Concentration is natural, and dispersion is unnatural, yet dispersion flows naturally from the absence of that power. The farmer of New York raises wheat, which exhausts the land. That wheat he sells, and both grain and straw are lost. The average yield per acre, originally *twenty* bushels, falls *one-third*. Had he a market on the ground for wheat, and milk and veal, he could cultivate rich soils, and the same labor that now yields ten bushels would yield him forty: and with each year he could clear such soils, for increasing population would produce demand for timber, and stone, and clay for bricks; and with each the great machine would yield forth more largely the treasures with which it is charged. He sows his wheat early and it is killed by the fly. Had he a market on the ground, for the produce of the rich soils now covered with timber, he could so improve his land as to sow it late, and then it would escape the fly. He sows his wheat on bottom lands, and it is killed by frost. Had he a market on the ground for veal and beef, he could enrich his higher lands with the manure produced on the lower ones, and then he would escape the frost. The farmer of Ohio raises wheat on thin soils, and it is killed by drought. He tries raising corn and wheat on the river soils, and it is drowned out, or destroyed by rust. He obtains ten bushels to the acre, which he must sell: and the produce of his land diminishes with each year. Were the consumer near him, his lower lands would be appropriated to meadows for his cattle, whose manure would enrich the poor soils of the higher lands, and drought would not then materially affect them. Another obtains thirty bushels of Indian corn from rich land, that, under a proper system of drainage, might yield sixty bushels: but while he wastes his labor and manure on the road, no drainage can take place. Thirty-two tons of corn, sown broad-cast, have been obtained from an acre, in Massachusetts. That acre was enriched with the manure yielded by western corn, consumed in the rich State that has already placed the consumer by the side of the producer. When Ohio shall make a market for such crops, she will have them.

The Kentuckian exhausts his land with hemp, and then wastes his manure on the road, in carrying it to market. Had he a market on the ground for corn and oats, peas and beans, cabbages, and potatoes, and turnips, he might restore the waste: but the rich bottom lands must remain undrained until he can place the consumer side by side with the producer.

Virginia is exhausted by tobacco, and men desert their homes to seek in

\* Has not all this been unhappily realized?—Eds. P. L. & A.



the west new lands, to be again exhausted : and thus are labor and manure wasted, while the great machine deteriorates, because men *cannot come* to take from it the vast supplies of food with which it is charged. Thousands of acres, heavily timbered with oak, poplar, beech, sugar-tree, elm and hickory, are offered at about the government price, or a dollar an acre, and on long credit, but they are not worth clearing : and they cannot be cleared, until there shall arise a demand for lumber for the construction of houses, mills, and railroads : and that cannot arise so long as men shall continue to be limited to the use of the worst machinery of exchange ; wasting on the roads the manure yielded by the products of their poor soils, and the labor that might be applied to the clearing of the rich ones. An acre of wheat has been made to produce over eighty bushels, and such will, at some future day, be the produce of these lands : but the consumer and the producer will then be near neighbors to each other, and all the manure produced by the land will go back again to the great giver of these rich supplies. She pays well those that feed her, but she starves those who starve her : *and she expels them.*

The cotton planter raises small crops on thin soils, and he, too, is ruined by drought. He tries rich soils, and rains destroy his crop, even to the extent of more than two hundred thousand bales, worth many millions of dollars, in a single season. Were he near neighbor to consumers of food, vegetable and animal, he could raise large crops of grass and food on rich lands, and manure the poor ones : and then he would suffer little from drought or rain. He would have always at hand, aid in harvest, and his cotton fields would yield him larger crops from smaller surface.

South Carolina has millions of acres admirably adapted to the raising of rich grasses, the manure produced from which would enrich the exhausted cotton lands : but she exports rice and cotton, and loses all the manure, and must continue so to do until the consumer of veal, and beef, and corn, shall take his place by the side of the producer of cotton. When that time shall arrive, her wealth and population will both increase : but until then both must continue to diminish.

The sugar planter raises large crops, but they too are drowned out : or, if they escape the loss from rain, they perish with the frost. Had he neighbors who would consume food produced from rich land, he might raise his sugar on lighter soils while draining his heavier ones ; and he would have at hand supplies of labor to aid him in his harvest. He now prays for the appearance of the cotton worm, as the farmer of Ohio prays for the potato-rot in Ireland. The one wants hands to make his crop, and the other mouths to eat it. Both are thus compelled to wish their neighbors ill, and for the same reason : because the consumer of food cannot take his place by the side of the producer. The direct effect of the dispersion of man is to cause vast loss of labor and manure, and to prevent the growth of those feelings of kindness that are found where men possess the power to concentrate themselves, and to combine their efforts for the general good.

The prosperity of the people of the United States is *not* due to the abundance of land. It exists despite of the necessity that has been forced upon them, for squandering their labor over the surface of hundreds of millions of acres of poor soils, leaving untouched the rich soils that lie beneath. It exists, despite of the necessity for living apart, when they might have lived in communion with each other, combining their exertions for the establishment of better schools, larger libraries, better houses and gardens, and all of the thousand aids to the development of intellect, of taste, and of the affections. It is, in despite of these obstacles, that they have schools where every man

is educated:\* that they have colleges and libraries fitted to produce men like Prescott and Bancroft, Kent and Story, Irving and Cooper, Norton and Robinson, Anthon and Pickering: that mind has been developed in the construction of machinery,† enabling them to establish with the mistress of the manufacturing world a competition that, more than any thing else, has tended to produce the abolition of restraints upon agriculture; and which in its turn tends now to produce a total change in her system and that of the world, by aid of which the machinery of exchange will be diminished in quantity and perfected in quality: the consumer of Germany, Italy, Canada, the United States and India, taking his place by the side of the man who produces the food he is to eat. With each step in the progress of this change, labor will become more and more productive: man will learn more and more to concentrate his thoughts and affections upon home: he will learn more and more to unite with his fellow man, and will acquire daily increasing power over the land and over himself: and he will become richer and happier, more virtuous, more intelligent, and more free.

That the people of the United States should have acquired power thus to affect the movements of the world, has been due to the fact that they have abstained from war, and preparations for war, while other nations have wasted millions of lives and thousands of millions of treasure on useless fleets and armies, and in wars of desolation. That they have to so great an extent remained at peace, has been due to the fact that the war-making power rested with the whole people:‡ with the men who paid the taxes, each one of whom had in his house and lot, his farm, his shop or mill, a little saving-fund in which he could deposit his time and money; and a home occupied by his wife and children, the depositaries of his affections. For them to go to war is difficult, because with them alone rests the power to declare it; and before such declaration can take place, a majority in favor of such a measure must be obtained. Among them is an infinite variety of interests. Some produce corn, and some cotton: and others tobacco, or rice. Some manufacture wool: others wood or cotton. Some own ships: and others steamboats. All these people *may* lose by war, and few *can* gain much. Under such circumstances, before a majority can be obtained, much discussion is needed in and out of the newspapers; in and out of the halls of Congress. Time is gained. The arguments for and against the war are read abroad as well as at home. The cost of war is discussed on both sides, and the value of the trade at risk is brought into view: and the result is a settlement of the difficulty. Such is the history of the Oregon and Maine boundary questions. Slow action is safe action; and where a nation takes the form of a pyramid, with a great base and a very small top, the motion is slow, and appears devoid of energy: whereas, in one like that of France, where the pyramid is inverted, the movement is rapid, and energy appears

\* "In New England, every citizen receives the elementary notions of human knowledge; he is moreover taught the doctrines and the evidences of his religion, the history of his country, and the leading features of its constitution. In the States of Connecticut and Massachusetts, it is extremely rare to find a man imperfectly acquainted with all these things, and a person wholly ignorant of them is a sort of phenomenon."—*De Tocqueville*.

† "The Americans possess a quicker mechanical genius than even ourselves—as witness their patents and improvements for which we are indebted to individuals of that country in mechanics, such as spinning, engraving, &c. We gave additional speed to our ships, by improving upon the naval architecture of the Dutch; and the similitude again applies to the superiority which, in comparison with British models, the Americans have, for all the purposes of activity and economy, imparted to their vessels."—*Cobden*.

‡ A single usurpation of that power has cost us 20,000 lives and 100 millions of money. May it prove a warning in all time to come!—*Eds. P. L. & A.*

to exist; but here, as elsewhere, the amount of power exerted is in the inverse ratio of the speed.

It may be suggested that concentration might have a tendency to prevent the expansion of mind consequent upon the existence of the present system, and that men would think too much of home, and become selfish. Directly the reverse is the effect that is produced in private and in public life. The prudent man that is fond of his home, his wife, and his children, has leisure to read and to think. The voluptuary and the spendthrift have leisure for nothing that tends to the expansion of mind. Such we see to be the case in France. Every speech in the chambers, and every newspaper, abounds in selfish views. If we look back through her history, among sovereigns, nobles, leagues, and leaguers, the whole presents a picture of selfishness not to be exceeded in the world. If we look at the people, it is the same. Expansion of mind and liberality of feeling cannot exist where men cultivate the poorer soils, for communication is slow and difficult; and man must mix freely with his fellow men, or he remains a barbarian.

In the course of England we find far less selfishness than in that of France; but it invariably appears during long periods of war, like those of India, and that long one which closed with the battle of Waterloo. Each step in the progress of the latter was marked by growing disregard of the rights of man abroad and at home, until neutrals were driven from the ocean, and the people of England were driven, almost *en masse*, to the poor-house. If we trace the progress of feeling from the days of the Edwards to the present time, we may see growing liberality with increasing population. If we look at the kingdom now, we may see the intensity of selfishness in many of the highest, and very many of the lowest orders: the one owners of extensive and ill-cultivated lands, looking to corn laws for support: and the other *habitués* of the gin shop. If we desire to find liberality of feeling, it may be met in abundance among the middle class of people who rejoice in the comforts of home.

We have shown that in no country does there exist the same tendency to concentration of affection, of feeling, of action, and of wealth, as in Massachusetts: yet *there* may be found liberality of feeling in the highest degree. How, indeed, could it be otherwise, when every boy, however poor, has in the little library of the town school, towards which his father pays his little contribution, and in which the son feels himself as much at home as the sons of the wealthiest, books that enlighten him in regard to the modes of thinking and acting throughout the world: and may now, or soon will, read in the morning's penny newspaper the history of the proceedings of *the previous evening* in every principal town in the Union, from New Orleans and St. Louis to the very extremity of Maine? With every diminution in the quantity required of the machinery of exchange, whether of things or ideas, we find expansion of intellect, liberality of views, and the disappearance of selfishness. Concentration, by means of which the consumer and the producer are brought together, has the same effect in nations as in families; and if we desire to see improvement in moral feeling, in habits of kindness, and in the disposition to make exertions for the common good, we shall find it as we look more and more inward, and endeavor more and more to render pleasant that home in which we are placed: in which, but for the interference of the laws of man with those of the Deity, there might in all time past have existed a degree of happiness, of which, in most nations, its inhabitants have had but little idea.

Passing southward from Massachusetts, eldest born of the family of States, we find, from north to south, and from east to west, a tendency in the same direction: but diminishing as men become more and more scattered, and the



fertile soils are seen more and more unoccupied. Throughout the whole system exists, in a greater or less degree, the tendency to concentration of feeling and affection, as is best shown in the existence of twenty-two hundred newspapers, each giving to its readers the history of the proceedings of the neighborhood; and in the universal tendency to have, in every little settlement, schools where the young can meet for instruction; and places for the worship of the Deity, where all, young and old, can meet. The *home* stands first; and where that is the case, there will be found in the highest degree the power of obtaining knowledge relative to things *distant from home*.\*

Were France to turn her regards inward instead of outward, and dispense with fleets and armies, and foreign missions, and the numerous other absurdities that characterize her system, the expenses of her government need not exceed those of the United States. That done, wealth would increase; and her people would cultivate the rich soils instead of the poor ones: and population would then advance. The United Kingdom contains less than a hundred millions of acres, occupied by twenty-eight millions of people, and the machinery of government that is needed is less than in the United States, where twenty-one millions occupy six hundred millions of acres; for where people are concentrated they protect themselves: whereas, where they are scattered they require protection. Were the expenditure of England reduced to five millions of pounds, wealth would grow rapidly; for everybody would work, either with his head or his hands: and the experience of every day in that country goes to show the rapid improvement of the higher orders, since it has been discovered that if men would maintain their places in society they must contribute towards its well-being, as the world gives nothing for nothing. In no part of the world do all classes, from the highest to the lowest, so uniformly labor for the advancement of the interests of the society in which they are placed, as in Massachusetts: and in none do men who have acquired fortune exert so much influence: and simply because, with all their fortunes, they continue to work almost to the close of life. They are always ready to unite in what is needed to be done, and to contribute both time and money to its accomplishment: and society respects them, because they promote the good of society. In less enlightened parts of the Union, men of wealth do little for the promotion of the interests of those around them, and the latter take no interest in them. All this may equally be seen by comparing the rapidly growing Liverpool with the stationary Bristol. Concentration tends to promote activity of mind, and that activity will exhibit itself more usefully abroad in the precise proportion that it manifests itself usefully at home. The nation that keeps itself poor by efforts in behalf of "the liberties of Europe," exhibiting to the world a whole people in the almshouse, does far less for the extension of freedom than it would do were it to mind its own business, and exhibit the beneficial effects of freedom in universal prosperity and happiness. The Parliament that occupies itself with the affairs of Spain and Italy, and India and Canada; and reports on coal mines, and drainage, and interments, exhibiting a near approach to barbarism; does less for liberty than a Congress whose attention is turned

\* "I travelled along a portion of the frontier of the United States in a cart, which was termed *the mail*. We passed, day and night, with great rapidity, along roads which were scarcely marked out, through immense forests. \* \* \* From time to time we came to a hut in the midst of a forest, which was a post-office. The mail dropped an enormous bundle of letters at the door of this isolated dwelling, and we pursued our way at full gallop, leaving the inhabitants of the neighboring log houses to send for their share of the treasure. \* \* \* It is difficult to imagine the incredible rapidity with which public opinion circulates in the midst of these deserts. I do not think that so much intellectual intercourse takes place in the most enlightened and populous districts of France."—De Tocqueville.

exclusively homeward, leaving the liberties of the world to take care of themselves. The influence of the United States upon the world is now greater than that of England, because it maintains little army or navy; and its people increase in numbers, and grow rich by minding their own business. True grandeur goes with peace and prosperity, and the cultivation of the rich soils of the earth. Littleness and selfishness are the invariable accompaniments of war and the cultivation of the poor soils.

The highest degree of security for the rights of persons and of property that exists in the world is to be found in Massachusetts: and it is there obtained at the smallest cost, because there the people do most for themselves; and those charged with the duties of government do least. As we pass from that State and from New England generally, south and west, security diminishes, and cost increases. In every part of the world security diminishes with the increased cost of government. The latter is greater in France than in any other portion of Europe: and hence it is that the government builds fortifications, and that every man feels that he is sitting on a volcano that may burst forth at any instant.\* In that country *centralization* is carried to the highest point: while in Massachusetts is shown the perfection of *concentration*. In the one, man's *necessities* are great: while in the other, his *powers* are greatest.

The **PAST** says to the landholder of the **PRESENT**: "If you desire that your property increase in value: labor to promote the growth of wealth, and the concentration of man for the purpose of eating the food where it is produced."

To the laborer it says: "If you desire a large return to your labor; to live in your own house, or on your own farm, eating your food on the ground on which it is produced: labor to promote the growth of wealth."

To all it says: "If you would be free, and happy, and rich: labor to promote concentration, whose companions are peace and wealth; and avoid centralization, whose companions are poverty and war, followed by the dispersion of man over the poor soils of the earth."

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*Brentz's Unbranning Machine.*—During the last sixty days, L. A. Spaulding, miller of this place, has been engaged in putting up a model machine for unbranning wheat—that is, to strip off the berry or outer coat or brand before grinding it. Yesterday ten bushels of wheat were submitted to the process, and the result equals the expectations of the discoverer. It is now no longer theory, and is one of the most important discoveries of the age—adding, as it does, at least twelve and a half per cent. to the value of the wheat crop of the country—and if brought to bear on the whole wheat and rye raised in the United States, would save at least thirteen millions of tons per annum. On flour manufactured for market the saving will be enormous, and no Flouring Mill, as now arranged, can compete with one having this improvement. The advantages are too great to be stated in a brief paragraph, which we pen merely to call public attention to the fact that such a machine is in operation in Lockport, and the only one ever used in any mill.

The advantages are—1st. Full twelve and a half per cent. more flour. 2d. Flour of better quality. 3d. Not so liable to sour or injure in a hot climate. 4th. Less offal.

We are informed that the apparatus sufficient for a mill having eight run of stone, will cost inside of five hundred dollars—exclusive of the right to use it. Such machinery is now in course of construction in the big mill in this village, and we are told that it will be ready for use in the course of a few weeks.—*Lockport Courier*.

\* How prophetic!—*Eds. P. L. & A.*

## WHEAT.

## HOW TO BE MANAGED—VARIOUS KINDS—THICK AND THIN SOWING.

THE reader may remember that a promise was given at page 110 to supply some extracts on these subjects, for which we had not room at that time.

The Commissioner of Patents *estimates* the crop of wheat for the whole United States in 1847-8, at 114,245,500 bushels; the population of the Union, at 20,746,400; the number of bushels of wheat consumed, allowing three and a half bushels to each free person, at 62,303,146½ bushels. We think he is mistaken, as we shall elsewhere explain, in his conclusion "that the American grain-growers can deliver grain or flour at as low a price in England as the grain-growers of any other country, not excepting Russia on the Black Sea; and that they have it in their power to command the great grain-market of Great Britain, and of nearly all the corn-importing countries of the world." If, however, the free-trade doctrine, for which the Commissioner is understood to be an able and zealous advocate, could be fully established, there is no doubt that we should soon be able to produce the cereal grains in such abundance that the world might have them almost for taking them away: the effect would be that agricultural labor would turn to other products—to sugar, to cotton and tobacco—until these again would become, if possible, drugs more valueless than now.

But we must have done with our own ideas on the politico-economical aspect of the subject, lest we should again be compelled to postpone the practical suggestions which even now may prove almost too late for practical use: we will take room, therefore, to add here only, that lately, in Maryland, we learned that a kind of wheat called the "blue stem white wheat" is fast making its way into general favor.

**1. Preparation of the Land according to variety of Soils.**—Wheat, the most valuable of grains, is grown upon nearly every description of land; but the soils best adapted for its culture are those which are more or less clayey: indeed these heavy soils are so peculiarly fitted to its production, that they are frequently distinguished by the appellation of "good wheat-land." It is well known, however, that wheat will grow to high perfection upon almost every soil, when the land is properly prepared for it.

Whatever may be the nature of the soil, it should always be the aim of the farmer to grow full crops: partial and sometimes extensive failures will even then but too often occur; but to neglect making the best-known preparation, or only to prepare for half a crop, is an ill-judged notion, and has a direct tendency to unremunerating farming.

In order to prepare for luxuriant crops, the land, when of a wet nature, must be liberated from all surplus water by proper under-draining; it must be clean from couch-grass [blue grass] and all other kinds of rubbish; not tired out by cross or improper cropping; must be judiciously manured, but not overdone with it, inasmuch as too much manure causes the growth of an unnaturally large quantity of straw, which, if the season happens to be wet or stormy, will be crippled and flat on the ground before the ears could come to perfection. When this happens, it both lessens the quantity, and very much deteriorates the quality of the grain. The land being otherwise well prepared, it is perhaps upon the whole more desirable to have a little deficiency of manure than too much, as, if necessary, a partial top-dressing may always be added in the spring. The land must not be wheated oftener than the soil will admit: some soils will bear it more frequently than others, and it is essentially necessary that the kind of seed should be adapted to the description of soil upon which it is to be propagated. An entire change of seed from hot land to cold, and from cold land to hot, will always be found advantageous, and especially from hot to cold soils, in which case it will frequently bring the harvest nearly a *week earlier*. In both cases it is generally allowed to increase the yield, improve the sample, and preserve the stock in greater purity.



It has now become very general to sow wheat after clover upon all classes of soils. This is doubtless one of the best systems of growing wheat: the roots of clover after becoming decomposed afford much nutriment to the growing wheat, and the firmness given to the land is another great recommendation. It has been frequently observed when the plant of clover has been deficient that the wheat-plant fails also. This, however, is not always the case: at the same time it serves to show a peculiar adaptation, on many soils, to the growth of wheat after clover. There are several other methods of preparing land, varying according to the nature of soils, which oftentimes produce crops of the first order. Some of these are as follows:—

1st, *Upon clayey soils*, a full summer's fallow is occasionally resorted to as a preparation for the wheat-crop, particularly when the land becomes foul with couch-grass, &c., and cannot very well be brought into a thorough clean state of cultivation by partial fallows, connected with the growth of green crops. Considerable benefit is also derived from summer fallowing upon this kind of soil, as it causes a more perfect decomposition of its constituent parts. This latter effect has been proved in many cases by experienced farmers, and has come under the observation of the writer. For instance, when this kind of land has been repeatedly dunged, better crops have frequently been obtained after a full summer's fallow without dung, than after a good dressing of dung without a full summer's fallow. In illustration of this statement, Professor Liebig, in his work on the 'Chemistry of Agriculture,' says—"In the effect produced by time, particularly in the case of fallows, or that period during which a field remains at rest, science recognises certain chemical actions, which proceed continuously by means of the influence exercised by the constituents of the atmosphere upon the surface of the soil;" and in another place he says—"It is quite certain that careful ploughing and breaking up of the soil, by producing the change and increase of its surface, exercises a very favorable influence upon its fertility." At no very distant period farmers generally considered systematic summer fallowing to be one of the most important points of agriculture; and there are some in the present day who have proved its peculiar suitability to a few of the wet clayey soils; though many speak of it as an unnecessary waste of labor, and a sacrifice of the produce of the land.

It is well known that wheat should be sown when the land is *clung*, and it is considered better to wait and have a late season of sowing than to put it in when the soil is in a dusty state; which, upon some land, causes the wheat to become root-fallen; and upon soils of a closer texture, where this does not occur, the wheat seldom flourishes so well as when put in after rain. The land is never too wet for sowing wheat, provided it works at all kindly, and the seed can be effectually covered. There are, however, some soils of a peculiar mixture of sand and clay, which, if stirred when very wet, will run together, and afterwards in dry weather form a hard crust, which of course checks the growth of the plant.

The best period for sowing wheat on cold, clayey soils is from the last week in September to the middle of October, as it seldom becomes winter-proud upon such land.

Many think that water-furrowing may be entirely dispensed with where the land has been thoroughly under-drained, but this opinion is not borne out upon very heavy tenacious clays. I have observed that upon such soils the surface-water has not gone off sufficiently quick without it.

Upon rich, deep, dry, loamy soils, wheat is successfully cultivated after potatoes, the potatoes being removed at the latest in October. It is no uncommon thing on some tracts of land—such as are extensively found in the

neighborhood of East Ham, Barking, Romford, Edmonton, Enfield, and other places—to grow wheat and potatoes alternately for many years together. But in order to carry on this system successfully, dung must be liberally used for the potatoes; no dressing beyond this is required for the wheat; the potatoes yielding from three hundred to five hundred bushels per acre, and the wheat from thirty to forty bushels. Of course, as above hinted, to carry on this kind of farming, manure must be made rich and applied abundantly, or be obtained plentifully from large towns. Upon this description of land four pecks of seed are amply sufficient, and it should never be sown till the end of October or the beginning of November; if at all earlier, it becomes winter-proud, and produces too much straw. I have witnessed the large yield of full fifty bushels per acre throughout a field of thirty-seven acres in the parish of East Ham, in Essex, where the seed was not sown till the middle of December, after a full crop of potatoes. Upon other strong yet rich loams, containing a larger proportion of clay, wheat and beans are successfully cultivated alternately. The beans, being kept perfectly clean, frequently supersede the labor of ploughing for wheat; in which case the land is harrowed previously to drilling or dibbling the wheat.

With respect to dibbling, we may observe, that it is acknowledged to be the means of obtaining a stiffer straw; and hence the propriety of hand-dibbling at a cost of 7s. or 8s. per acre on a loose peat.

On freshly broken-up grass-land, oats are preferred to wheat; though, after the surplus vegetable matter of the soil has been reduced by burning, tillage, and the mechanical application of suitable earthy matter, wheat can be grown of good quality. Of course these remarks on fresh broken-up land are general, though not applicable to every case.

It is an acknowledged fact, applicable to every description of soil, that the land prepared for wheat cannot be too stale or solid, provided it be free from weeds, and the surface sufficiently mouldy to cover the seed.

2. *The application of Dung or Artificial Manures.*—If a sufficiency of farm-yard manure could be obtained there would be little necessity for any other, inasmuch as it contains all the ingredients requisite for producing every kind of crop. But let it be understood that the dung should be composed of the excrements of animals well fed under cover.

It has been before observed, that when dung is to be applied in liberal quantities for the benefit of wheat, it should, if practicable, be put on the land previous to sowing a preceding root or pulse crop; for thus those ingredients of the dung, which only tend in their first effect upon the land to force an over-abundant growth of straw, will have been extracted, leaving the land in a good state for wheat. Where root or pulse crops are not grown, the dung should be applied to naked fallows for wheat as early in the summer as possible.

Though the practice of manuring immediately before sowing the wheat is objectionable, it is still adhered to in many parts of the country.

A compost of earth and dung is highly beneficial on light chalky and silicious soils.

Four or five loads per acre of farm-yard manure and half a folding with sheep are a good manure for wheat, and frequently adopted by the farmers of the midland counties.

A very large proportion of land is manured for wheat by means of the sheep-fold alone, especially upon dry soils, where great benefit is derived by its solidifying the ground; it has also a tendency to kill the slugs and other destructive insects, or at least to put a stop to their ravages. Folding

upon fallows is likewise adopted with advantage; upon loose, light soils, folding after the wheat is sown is of advantage.

Some farmers adopt the plan of ploughing green crops in; but others consider it a better plan to convert all green crops into animal manures, by feeding off with sheep or by soiling.

Pigeons' and hen-house dungs are frequently used as a top-dressing for wheat, and are almost sure to be beneficial on any soil. From thirty to forty bushels are used per acre. Like all other light manures, it is best covered by means of harrowing or hoeing, or it may be drilled between the rows.

Soot is much used as a top-dressing for wheat, and is commonly found very beneficial. From forty to sixty bushels per acre are generally applied. It has a tendency to increase the quantity and improve the quality of the wheat, without forcing an undue quantity of straw. It should be sown in February or March at the latest. It is however frequently sown as late as the month of May; but if a dry summer follows, it is in that case of little or no value. As ammonia is the principal ingredient of this manure, it should be covered by means of the hoe or harrow, being liable to waste by evaporation; and, as it is a very light substance, calm and showery weather must be chosen for applying it. This manure is found to be peculiarly suited to the county of Hertford, and consequently a very large proportion of the soot made in the metropolis comes into this county. It has been used in Essex, Kent, Middlesex, and other counties, but in most cases without general beneficial results.

Bones may be applied with much advantage upon dry soils previous to sowing the wheat, at the rate of from sixteen to thirty bushels per acre.

Guano, at the rate of from two to three cwt. per acre, is sometimes advantageously used at the time of sowing the wheat. This manure is found most beneficial on poor loamy soils.\*

The nitrates of soda or of potash are occasionally used at the rate of from one to three cwt. per acre, and applied broadcast in March or April. Chemical analysis has proved that wheat always contains a much larger proportion of potash than of soda; hence we may suppose that nitrate of potash is the best of the two: it is, however, the most expensive. As to the application of nitrate of soda to wheat when it has a yellow or sickly appearance in the spring, if finely pulverized, and sown in moist weather, it will in a few days alter the sickly hue to a luxuriant green. As it increases the quantity of straw, it is best suited to poor loams and gravelly soils.

Common salt is sometimes applied before sowing the seed, at the rate of from ten to twenty bushels per acre, and is often beneficial in bringing the ears to perfection: it also causes a greater weight of grain, but seldom increases the quantity of straw.

These are the principal manures that have been proved to be useful for wheat. There are many others; but even a bare enumeration would occupy too much space.

**3. The Time of Sowing.**—The time of sowing wheat varies with the nature of the soil. Upon very strong clays or cold soils the plant has been known to flourish best when sown as early as the middle of September. It takes a firmer and deeper hold of the soil before the frost commences, and there is no danger here of its becoming "winter-proud." Sowing early on

\* In Maryland, perhaps we might say particularly in Hartford and Montgomery counties, guano has been used with great advantage. Benjamin Hallowell, a practical farmer, and a man of science, will give us an account of his experience in the latter county; but he is of opinion that bone-dust is preferable to guano. We may possibly hear from him in time for this number.



this class of soils not only insures a better crop, but brings it much earlier to harvest. Wheat seed-time upon these soils begins about the 20th of September, and lasts till towards the end of October. Wheat sown at the former period has been known to be nearly a fortnight earlier to harvest than that which was sown a month later.

Upon warmer soils, as before observed, the best period of sowing is from the last week in October to the last week in November. If sown earlier, the plants get too forward, and do not mat on the ground; the plants become weak, and spindle into a long slender stalk, and frequently lose their healthy appearance in the spring. Varieties of spring-wheat are sown in February and March, and succeed on good land, though a productive crop is rarely seen on inferior sands and gravels.

Observations having been made on the time of sowing in treating of the preparation of the land, any further remarks are uncalled for.

4. *The Quantity of Seed.*—The necessary quantity of seed varies from four to ten pecks per acre. It depends entirely upon circumstances—as the time of sowing; the manner of sowing, whether broadcast, drilled, or dibbled; when sown early, it requires less seed than when sown late; the nature and condition of the soil, the variety of wheat, and the quantity of vermin that consume the grain before or after it vegetates,—all have some effect on the quantity of seed required. The poorer the land, the more plentiful must be the seed. On a poor gravelly soil, where an abundance of manure is not attainable, ten pecks are requisite, drilled at from six to eight inches; and we find, from observation of both wet and dry seasons, that when this quantity is at all sensibly decreased, or the intervals between the drills increased to a material extent, the crops suffer a diminution both in quantity and quality.

When the land is good, very little seed is required, for it always branches out in the spring; but on poor land, when sown late, many of the plants die, at the same time that others on good land are preparing for numerous branches. Nothing definite, therefore, can be named as to the proper quantity to be sown. Upon the broadcast system, where two and a half bushels per acre are sown, it is generally allowed that, if drilled, two bushels would be equivalent, and if dibbled five pecks. As an instance of the effect of time, I may mention that upon a poor heavy soil, if we commence in September with two bushels, by the middle of October we increase it to two and a half bushels per acre.

It has been repeatedly proved that upon land of the best quality, and in high cultivation, if dibbled and put in perfectly regular, four pecks of seed per acre are better than more, inasmuch as it leaves a roomy and healthy space between the plants, encourages branching, and produces stiffer straw, with plumper ears, than when sown thicker, and upon the whole gives the most certain and fullest production that the land is capable of. Thickly-sown wheat on rich land grows much weaker straw, smaller ears, and is liable to fall down long before the usual time for coming to perfection.

Varieties of wheat differ in their tillering properties. The following experiment was made in 1843:—

October 28th, 1843, planted thirty kernels of six varieties of wheat, with a view of testing their tillering property, and the time at which they arrive at maturity. The wheat was dibbled, one kernel in a hole, at equal depth and distance, on a piece of loamy ground. The varieties each formed a row, distant from each other ten inches, and from plant to plant in the rows four inches. The following table will show the result of the experiment:—

Variety.	Number of Seeds vegetated.	Time of coming into Ear.	Number of perfect Ears.	Number of Ears from one Grain.
Bellevue Talavera White . . . . .	26	June 3	234	9.0
Marygold or Rattling Jack Red . . . . .	26	" 14	134	5.1
Spanish Talavera White . . . . .	26	" 8	203	7.8
Spalding's Prolific Red . . . . .	27	" 14	155	5.7
Jonas's Seedling White . . . . .	26	" 12	168	6.4
Shirreff's Hopetoun White . . . . .	25	" 12	191	7.6

The Spalding's and Marygold are the most productive of the six varieties, though in this case they tillered less than any of the other kinds.

5. *The varieties of Seed and the change of Seed.\**—The variety of wheat must be suited to the soil and climate; and the knowledge of the varieties best suited to a particular soil can only be obtained from the experience of the farmers who cultivate that soil. It is, however, bad judgment to be so far prejudiced in favor of one sort as to cultivate it to the exclusion of all others. The best kinds deteriorate in course of time: new varieties are constantly being introduced, some of which would in all probability be found superior to the old.

More wheat is now produced per acre, by greater attention being paid in choosing the most prolific kinds. It should, however, be borne in mind that the most prolific are also very frequently of a coarse quality, and commonly lose in price what they gain in quantity. At the same time it is admitted by those who have put the question to a test, that the most productive are often the most advantageous to the grower. Instances, indeed, have occasionally occurred where heavy white wheat of the finest quality has been tried by the side of a coarser description, and has equalled it in quantity; but this must be considered an exception to the rule, and not the rule itself.

On rich soils, where an abundance of straw is produced, short and stiff-strawed wheat yields the best crop, as the weak and long-strawed wheat is liable to be spoiled by being laid. Such varieties as Spalding's Prolific and Piper's Thickset are suitable for rich land. On very productive wheat-land in Norfolk, Piper's Thickset produced such abundant crops, that on its introduction into that county it at once obtained the name of Protection Wheat. On the contrary, short-strawed wheats like Piper's Thickset are very inferior to long-strawed wheat on land that yields a light crop. Mixed wheat (red and white) is sown in some parts of the country, care being taken to select two sorts that ripen at the same time. It is considered that two varieties are more likely to produce a certain crop than one alone; for undoubtedly it frequently occurs that one kind produces the heaviest crop one year, and another the next; and when equal portions of red and white wheats are sown together, sometimes the white and sometimes the red predominates in the sample that is produced. It is well known that a mixture of red and white wheats commands a higher price in the market than red alone.

During the last few years many new sorts of wheat have been introduced, though some are but new names for varieties long well known. Some are

\* BLUE-STEM WHITE WHEAT is getting in great favor in Maryland: we understand Mr. Wright made a crop of about or over twenty-five bushels to the acre, at Blakeford, near Queen's Town. It is said to be free from the fault found with the Mediterranean wheat—weakness of straw; on the contrary, the straw is uncommonly stiff and strong, while the grain is well covered in with the chaff, that prevents it from shattering—while it threshes uncommonly well. The popularity and spread of this variety is rapidly increasing.

noted for the earliness of their growth,—among these are the Bellevue Talavera, Mexican Vicario, and the bearded April wheat, which are all recommended for spring-sowing; but it has been confidently asserted, from observation, that the two former, though of superior quality, do not on a gravelly soil, in a dry climate, produce an average crop, if spring-sown; besides this, the grain adheres with such tenacity to the chaff, that there is extreme difficulty in thrashing them with the machine.

Among other faults which some varieties possess is an incapability to withstand severe weather, liability to shell when harvested, or to grow in the ear, to which very chaffy kinds are more especially subject.

The advantages to be derived from a change of seed from a hot to a cold soil, and *vice versa*, has already been mentioned. Plants removed from one climate to another will in some measure continue in the same habit of growth. Thus seed brought from a warm country will produce an early crop, though it will be inferior in hardihood to plants grown from seed brought from a cold climate; and it will be found that, whilst the latter improves by cultivation, the former deteriorates.

The following is the result of an experiment tried last year upon red wheats by Mr. J. B. Brown, Elms Hall, Colne Engaine, given to the public, which will be found to contain valuable information:—

	Quantity per Acre.			Weight per Bushel.	Weight of Straw per Acre.	Bushels of Chaff per Acre.
	h.	p.	p.	lbs.	lbs.	
1. Colne White Chaff . . . . .	42	3	4	62	3250	90
2. Bristol . . . . .	39	2	12	63½	3515	75
3. Sharp's, Goody's, or Crabb's . . . . .	39	0	14	64	3415	70
4. Spalding's . . . . .	38	2	1	65½	3765	80
5. Seyer's . . . . .	37	3	4	65	3860	75
6. Smoothy's . . . . .	36	2	14	64½	3985	65
7. Kent Red . . . . .	36	2	4	64	3755	65
8. Sewell's . . . . .	36	0	6	63½	3535	65
9. Piper's Thicket . . . . .	33	3	0	63½	2550	100
10. Kent Red . . . . .	36	2	14	64	3780	50

	Weight of Grain per Acre.	Proportional Weight of Straw in comparison with Grain.	Proportional Measure of Chaff in comparison with Grain.
	lbs.		
1. Colne White Chaff . . . . .	2654	1.22	2.09
2. Bristol . . . . .	2520	1.39	1.88
3. Sharp's, Goody's, or Crabb's . . . . .	2510	1.36	1.78
4. Spalding's . . . . .	2522	1.49	2.05
5. Seyer's . . . . .	2458	1.57	1.98
6. Smoothy's . . . . .	2368	1.26	1.77
7. Kent Red . . . . .	2340	1.60	1.77
8. Sewell's . . . . .	2291	1.54	1.80
9. Piper's Thicket . . . . .	2142	1.19	2.91
10. Kent Red . . . . .	2350	1.60	1.36

The wheat to which the above tables refer was sown on the 28th of October, 1845, at the rate of five pecks per acre, with the exception of No. 10, and that was at the rate of ten pecks per acre. The reader will of course draw his own conclusions as to the merits of each kind of wheat; and also of thick and thin sowing.



6. *The Diseases to which Wheat is liable.*—The principal disease, and one which can be completely guarded against by the seed undergoing preparation previous to its being sown, is that which is commonly known among farmers by the name of smut.

This disease was formerly very common, but now smut-balls among good farmers are seldom seen; when they are found it may be attributed to carelessness in preparing the seed. Tull informs us that—

“Brining seed-wheat to prevent smut was first practised about the year 1660, when a vessel of wheat was sunk near Bristol, and the grain so much injured by salt-water, that, though it would vegetate, it was considered to be unfit for bread. It was taken out of the vessel at low-water, and sown in different parts. It was free from disease at the following harvest, when wheat in general happened to be smutty. This accident led to the practice of brining.”

Salt-water of sufficient density to float an egg is still extensively used. A quantity of salt and water of the above density is prepared in a tub, the wheat is put into the pickle, and, when stirred, all the diseased or light grains will rise to the surface, which are skimmed off. The wheat is then taken out of the brine, and a sufficient quantity of new slaked lime sifted upon it to dry the whole quantity.

Some farmers wet their seed by throwing over it, when lying in a heap, a quantity of urine; it is then well mixed, and dried with lime, as in the former case.

Water poured on caustic lime, and then thrown on the wheat while effervescing, is a plan adopted by many.

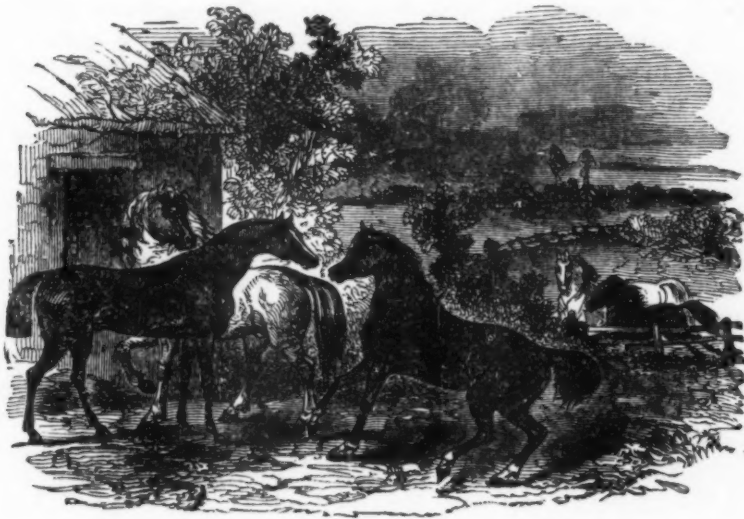
But the cleanest, and perhaps the most efficacious preparation, is that of blue vitriol (sulphate of copper): 4 quarts of boiling water poured on one pound of blue vitriol is sufficient for three bushels of wheat; this is well mixed upon the floor with the grain, and thrown into a heap on the night previous to the day the seed will be wanted.

Others prepare a solution of blue vitriol in a tub, by adding double the quantity of cold water to the above mixture; the wheat is put into it, and the light grains are skimmed off. The seed is then taken out and laid in a heap to dry. A convenient apparatus for wetting wheat, is a tub sufficiently large to wet four bushels at once. The solution is first put in, and then four bushels of wheat; this is well stirred, and skimmed with a common flouting-dish for ten minutes. The liquor is then drawn from the tub into an under tank, and the wheat thrown out with a shovel. As soon as this is completed the solution is returned to the tub, and we proceed in like manner with another four bushels.

Another method is to have a “skep” basket, into which the wheat is put, and plunged into the solution contained in a tub.

When the seed has been prepared, and cannot be used on account of the weather, care must be taken to spread it thinly over a floor, and give it an occasional turning.

There are many other diseases to which wheat is liable, as the rust, blight, mildew, &c. &c. Some of these are owing to the growth of parasitical plants, “fungi,” which arise from a want of the proper constituents in the soil for the growth of the wheat-plant to perfection, from an unfavorable season, or from a feebleness of constitution inherent in the plant. Disease and havoc are also caused by insects. But to describe fully the diseases to which wheat is liable, requires the pen of a man who has made that subject his peculiar study, rather than of the farmer: the latter may know from dear-bought experience how to guard, in some measure, against these diseases, but cannot so well describe their cause.



## THE HORSE.

## INTRODUCTION.

*Valuable Properties of the Horse—Reasons for its Use being Proscribed to the Israelites—  
Difficulty of Determining its Native Country—Excellence of the British Breed.*

THE Horse is a distinct genus, belonging to the order of *Bellux*, or large beasts, and in himself the most serviceable of all quadruped animals, as well as the swiftest of those brought under the dominion of man. Notwithstanding these high qualifications, ancient history informs us, that, in the primitive ages of the world, the ass was used in preference to him, not only as a mere beast of burden, but for the purpose of conveying, from place to place, persons of the highest distinction. This, however, may be satisfactorily accounted for. Previously to the art of horsemanship being known, the ass, a superior race of animal perhaps to that generally found in Europe, was more easily managed than the horse, and better suited to the kind of food usually met with for his support. He was, in fact, found to answer every purpose of horses, until mankind increased in numbers and in wealth, when the complicated interests that were the result, brought their services into use, and they were trained to the art of war. But another reason may be given for the late introduction of horses. Their use was interdicted by the Almighty in the early ages of the world:—first, lest his favorite people, the Israelites, should be led to idolatry, by carrying on commerce with Egypt; secondly, by their dependence on a well-appointed cavalry, they might cease to trust in the promised aid of Jehovah; and, thirdly, that they might not be tempted to extend their dominion by such means, and then, by mixing with idolatrous nations, cease in time to be that distinct and separate people which it was His intention they should be, and without which the prophecies relative to the Messiah could not be fully accomplished. Thus in the book of Psalms, the horse commonly appears only on the side of the enemies of God's people; and so entirely unaccustomed to the management of him were the Israelites, at the period of their signal defeat of the Philistines and other idolatrous nations, that David, their commander and king, caused the greater part of the horses of the cavalry prisoners to be cut down, from his ignorance of any use to which he could apply them. In the reign of Solomon, however, a cavalry force was established, but to no great extent.

In the infant state of all nations, indeed, we can readily account for the

restrictive use of horses. A great deal of land that might be applied to the production of human food is requisite for their maintenance in all countries; and, in hot and sterile ones, the camel answered better, and was found ready at hand. It is true they were used in the armies of the ancient Greeks and Romans, which were not considered as complete without them. In Greece they were not so numerous; but in a war with the Italic Gauls, the Romans are said to have had no less than seventy thousand horses, and seven hundred thousand foot, to attack their formidable enemies.\* The army of Xerxes, when reviewed by him at Dorsica in Thrace, after it had passed the Hellespont, is reported by Herodotus, contemporary with him, to have contained eighty thousand horse; but the judicious reader will be inclined to make considerable abatements from the boasted amount of that celebrated but ill-fated expedition resting as it does entirely on the authority of Grecian writers, who represented facts in the light the most unfavorable to their enemies, and the most glorious to their own gallant countrymen.

As, in the scale of excellence, the horse ranks first of all animals coming under the denomination of cattle, and, as Buffon justly says of him, "possesses, along with grandeur of stature, the greatest elegance and proportion of parts of all quadrupeds," it is not a matter of surprise, that, as an image of motive vigor, he should have been the subject of the chisel and the pencil of the first artists in the world, or that the description of him by the pen should have been not considered as unworthy the greatest writers of antiquity. But it is in his native simplicity, in those wild and extensive plains where he was originally produced—where he ranges without control, and riots in all the variety of luxurious nature—that we can form an adequate idea of this noble animal. It is here that he disdains the assistance of man, which only tends to servitude; and it is to a description of his release from this servitude, his regaining his natural liberty, that we are indebted for two of the finest similes of the immortal Greek and Roman epic bards. The return of Paris, with Hector, to the battle of Troy, is thus given in the sixth book of the *Iliad* :—

"Ὡς δ' ὅτε τις σταρὸς ἵππος, ἀκούσας ἐπὶ φέρην  
 Δαρμὸν ἀπορήξας δαίη πέδιλοις κροαίνων,  
 Εἰωθὸς γούεσθαι ἄρρεϊος ποταμίου,  
 Κούδων' ὕψυ δὲ κάρη ἔχει, ἀμφὶ δὲ χαῖται  
 ὦμοις ἀίσσουραι· ὃ δ' ἄγλατῆφι πεποικίως,  
 Πίμψα ἔ γούνα φέρει μετὰ τ' ἥβη καὶ νομὸν ἵππων."

And Virgil is considered to have even exceeded Homer, in that splendid passage in the eleventh book of the *Æneid*, where Turnus, turning out fully accoutred for the fight, is compared to a horse that has just broken loose from his stall :—

"Qualis, ubi abruptis fugit præsepia vinclis,  
 Tandem liber equus, campoque potitus aperto,  
 Aut ille in pastus armentaque tendit equarum,  
 Aut, assuetus aquæ perfundi flumine noto,  
 Emicat, arrectisque fremit cervicibus alte  
 Luxurians; luduntque jubæ per colla, per armos."

It is impossible, at this distance of time, to fix upon the native country of the horse, as he has been found, in various forms, and of various sizes, in every region of the Old World. The difference in size is easily accounted for. The origin of all animals of the same species was doubtless the same in the beginning of time, and it is chiefly *climate* that has produced the change we perceive in them. Warmth being congenial to his constitution, and cold naturally injurious to him, he is produced in the most perfect form, and in the greatest vigor, when subject to the influence of the one, and not only diminutive, but misshapen and comparatively worthless, when exposed

\* See DUNCAN'S *Discourse on the Roman Art of War*.



to the evils of the other. Buffon, however, is wrong in making the horse indigenous to Arabia, as is clearly proved by a reference to the Sacred Writings. In the reign of Saul, horse-breeding had not yet been introduced into Arabia; for, in a war with some of the Arabian nations, the Israelites got plunder in camels, sheep, and asses, but still no horses. Even at the time when Jerusalem was conquered and first destroyed by Nebuchadnezzar, Arabia appears to have been without horses, as the Tyrians brought theirs from Armenia. That the earliest available uses of the active powers of horses was adopted by the Egyptians, the same authority satisfies us; for we read in the fiftieth chapter of Genesis, that when Joseph carried his father's remains from Egypt to Canaan, "there went up with him both chariots and horsemen." One hundred and fifty years afterwards, the horse constituted the principal strength of the Egyptian army; Pharaoh having pursued the Israelites with "six hundred chosen chariots, and with all the chariots of Egypt." The earliest period now alluded to was 1650 years before the birth of Christ; and 1450 years before that event, the horse was so far naturalized in Greece, that the Olympic Games were instituted, including chariot and horse-races.

The origin of the native horse of our own country is now merely a question of historical interest, the discussion of which would not lead to much practical benefit. That experiments, founded on the study of his nature and properties, which have from time to time been made to improve the breed, and bring the different varieties to the perfection in which we now find them, have succeeded, is best confirmed by the fact of the high estimation in which the horses of Great Britain are held in all parts of the civilized world; and it is not too much to assert, that, although the cold, humid, and variable nature of our climate is by no means favorable to the production of these animals *in their very best form*, we have, by great care, and after a lapse of nearly two centuries, by our attention to breeding, high feeding, and good grooming, with consequent development of the muscles, brought them to the highest state of perfection (with one exception\*) of which their nature is susceptible. They may be classed under the following heads, and treated of individually, viz. the Race-Horse, thorough-bred and not thorough-bred; the Hunter; the Hackney, for various purposes; the Charger; the Troop-Horse; the Coach, Chariot, and Gig-Horse; the Stage-coach and Post-Horse; and the Draught or Cart-Horse.

### THE RACE-HORSE.

#### PROGRESSIVE IMPROVEMENT OF THE ENGLISH BREED.

ALTHOUGH we may safely pronounce that the native breed of English horses, however esteemed for other purposes, could not *race*, in the present acceptation of that word, yet it is equally obvious that they formed the parent stock of the renowned English Racer. The first step to improve it by a cross with Eastern blood, appears to have been taken by James the First, who gave the enormous sum (in those days) of £500 for an Arab stallion, which, however, the Duke of Newcastle, in his work on Horsemanship, (great authority at that time,) wrote down, on account, chiefly, of his comparatively diminutive size. At the Restoration, however, there appears to have been a tolerably good breed of horses in England, which Charles the Second improved by an importation of Barbs and Turks, whose blood was engrafted on the original stock, already very considerably ameliorated by the services of a stallion called Place's White Turk, imported by Oliver Cromwell's Master of the Horse, who bore that name; and afterwards by those of the Helmsley Turk, followed by Fairfax's Morocco Barb. The change

\* The exception is the English cart-horse, as will be stated hereafter.

was at this time so visible, that the Lord Harleigh of that day expressed his fears lest it might be carried to such an extreme as to extirpate the strong and useful horse, which, perhaps, the majority of his countrymen were very well satisfied with before. In the latter end of Queen Anne's reign, however, the first great trump turned up, to secure future success. This was a stallion, called Darley's Arabian, purchased in the Levant, by a Yorkshire merchant of that name, although without any real attestation of his pedigree, or country. The prejudice against Arabians, and other Eastern horses, the effect of the Duke of Newcastle's anathema against them, having now, for the most part, subsided, a good deal of their blood had been infused into the mares of that day, when another stallion, whose services were still more signal, accidentally made his appearance. We allude to the Godolphin Arabian, as he was called, purchased out of a cart in Paris, and consequently of uncertain caste, but evidently the horse of the Desert; who, as will be hereafter shown, may be said to have won the game. Although at first thought so meanly of, as only to be used as a teaser, yet, fortunately for the Turf, he lived twenty years after his services became notorious (by the accident of his being the sire of a capital racer, out of a mare which the stallion to which he was teaser refused to cover,) and, strange to say, no very superior race-horse has appeared in England, for many years, that cannot be traced to his blood. The success of this horse was much facilitated by the lucky coincidence of his arrival in England at a critical time, that is to say, when the stock from Darley's horse, and the several Arabs, Barbs, and Turks, together with the royal mares imported by Charles the Second, had been "crossed," as the term is, on each other, and had produced mares worthy to be the channel of imparting his own transcendent qualities to posterity. Taking it for granted, then, that the English race-horse is descended from Arabian, Turkish, and African (Barb) blood; and also taking into consideration the various peculiarities in the form and power of each of those kinds, requiring modification of shape, qualities, and action suited to the purposes for which they were intended, it cannot be denied, that a task of no ordinary difficulty was imposed on the English horse-breeders, and that they have executed that task with a masterly hand. If other countries furnished the blood, England has made the race-horse.

With the exception of one Eastern horse, called the Wellesley Arabian, the grandsire of a winner of the Oaks in 1826, also of Dandizette, who ran second for that stake in 1823, and was the dam of Exquisite, who ran second for the Derby in 1829, the English Turf has benefited nothing, during the last half century, from the importation of foreign blood. The fact is, that having once gotten possession of the essential constitutional parts necessary to form the race-horse, and which will be described hereafter, we ourselves have, by a superior knowledge of the animal, *and the means of availing ourselves of his capabilities*, not only by rearing and training, but by riding him also, brought him to a pitch of excellence which will not admit of further improvement. Superior as is the air of the Desert, which is said to be so free from vapors, that the brightest steel is not affected with rust, if exposed to it for a night, to that of our humid and ever-varying climate; and propitious as it must be to animals found, *as the horse was found*, in the greatest perfection when reared in it; yet were the finest Eastern horse that could be procured brought to the starting-post at Newmarket, with the advantage of English training to-boot, he would have no chance at any weight, or for any distance, with even a second-rate English race-horse. It may not, however, be uninteresting to point out what are the essential racing points originally imparted to the horse of our own breed by these foreign stallions and mares, and without which they never would have arrived at any thing approaching the excellence which they have, for the last century, attained.

## COUNTRY LIFE.

How often do we hear country ladies bewailing their lot, complaining of the monotony of a country life, and envying the destiny of such of their acquaintance as live in the turmoil and excitement of a town. Would our fair readers but explore the rich treasures of rational and pure enjoyment that are so profusely scattered around a country-house, they would be more apt to condole with than envy their sisters of the city. Our object, in these pages, will be to awaken in your minds an interest in the various works of nature, so thickly strown around you; to direct your attention to the birds, which build their nests, and sing their varied songs of love and joy in every tree, and bush, and shrub; to the flowers, which deck with their thousand hues the sunny bank and the fertile meadows, the parched heath and the rippling brook; and above all, to teach your thoughts to ascend from the admiration of the creature to the contemplation of the Creator, and in all your observation of the works of nature, "to look through Nature up to Nature's God."

Each season has its glories and its wonders. First comes Spring—animated by her genial breath, the whole face of nature changes; that which is now wrapped in the gloom and sleep of winter, will soon awake to renewed life and vigor, and all this will take place at first slowly and gradually.

Now, then, is the time to commence your observations, before the multiplicity of objects distracts your attention and bewilders your ideas. You must acquire a *habit of observing*; not merely of looking and of seeing, but of intimately, narrowly *observing*; for be assured, that an observant Polyphemus, with his solitary eye, obtains far more information in one day than an unobservant Argus, with his hundred eyes, in a whole month. It is surprising how your interest in your daily walks will be increased, when you have gained an insight into the history, the uses, and the various objects which you meet with. No walk, at least no *country* walk, can be devoid of interest to a mind desirous of acquiring information. You will ever be meeting with something new to excite your admiration, ever falling in with something fresh, to impart instruction and to afford amusement. These country walks will give vigor to the mind, and health to the body; that which before was too frequently looked upon as a toil, will now be regarded as a pleasure; you will often be induced to take exercise in the open air, and the result will be a buoyancy of spirits, and a lightness of heart, and a cheerfulness of temper, which all your in-door amusements, and all your previous formal walks had failed to produce.

## PROTECTION OF ANIMALS.

It has often afforded me much pleasure to observe the care which a kind Providence has taken for the better preservation of its creatures, by apportioning their splendor and beauty so as best to accord with their safety. This is observable in many varieties of birds, the males of which are furnished with plumage of the most beautiful description, while the females are of a dull earthy color. It is not difficult to assign a reason for this, and one which always gives me pleasure to reflect upon; for if so much care is taken by our Heavenly Father in the preservation of an insignificant bird, may we not, with the utmost confidence, look to the same source for protection, if we rightly and sincerely apply for it?

If hen birds, who sit and are exposed to the view of beasts and birds of prey, and of man, had the same gaudy colors as the male, they would presently be discovered and destroyed; whereas, by having plumage of a dull brown, or earthy color, they can

scarcely be distinguished from the ground on which they sit, and they thus escape observation and destruction. This is particularly shown in the pheasant, peacock, and duck tribes. What can be more beautiful than the male bird of the golden pheasant? while the plumage of the female is so dull that it appears to belong to another species. The males of the duck tribe are remarkable for their fine plumage, whilst that of the females is a quiet brown; and the distinction between the peacock and peahen is still more conspicuous. The same observation applies to the chaffinch, yellow-hammer, and many other birds; while the plumage of the male and female of the falcon, swan, raven, owl, and other species, who are able to defend themselves, is the same.

The same protecting care is shown in the plumage of birds which are much preyed upon, such, for instance, as the common partridge and lark, which are not easily distinguished from the earth on which they are



sitting, or, as Mr. White calls it, "cowering and squatting," while a marauding hawk is hovering over them. The common house and wood pigeons would fall an easy prey to that bird if it were not for the amazing strength of their wing, which enables them to outfly and get away from it; while swallows, trusting to their wonderful agility, mob the hawk with impunity. Warblers, such as the nightingale, red-breast, fauvette, wren, &c., on the contrary, are pretty secure from its attacks, by sheltering themselves in thick hedges and bushes, and the quail and corn-crake by seldom leaving the long grass and standing corn. One would almost suppose that, owing to this beautiful economy for the preservation of the weaker birds, the hawk would be unable to procure its food; but when one examines the wonderful symmetry of its shape, the beauty and brilliancy of its eye, and the swiftness of its flight, it will no longer be a matter of surprise that some birds and animals should be unable to make their escape from it. The hawk *sails* over heaths and moors, and preys upon young hares and rabbits, as well as snipes and other small birds, and, I believe, upon frogs and lizards; and frequently he hovers in the air for a considerable time till something disturbs a bird, when he immediately pounces upon it.

In examining the formation and habits of the kangaroo, and the nature of the country in which it is found, we shall be forcibly struck with the truth of what has been remarked respecting the beneficent provisions observable throughout the animal kingdom for the preservation of the various creatures which compose it.

Kangaroos inhabit a country where there are enormous tufts of the coarsest grass growing in swamps or marshy ground, several feet in height, and at a considerable distance from each other; or else they frequent rocky or bushy ground. By means of the great strength of their tail and hind feet, they can make bounds in succession of from twelve to twenty feet in length, and several feet in height, from one tuft of grass, or from one rock or bush, to another, and thus escape from their pursuers. Nor is this all; for such is the strength and rankness of the grass in New Holland, or at least in some parts of it where the kangaroo most abounds, that if they produced their young in the manner usual with other quadrupeds, they would either wander and be lost in the high grass, or, in case the dam was obliged to leave them to provide for her own safety, it would not be easy for her to find them again. By means, however, of an abdominal pouch, in which the young reside, and which they only occasionally leave either for

exercise or amusement, they are never separated from their dam, who can make her escape with them in her pouch.

I have, however, been assured that those kangaroos which have been domesticated and bred in this country, are gradually losing the use of the pouch as a place of refuge for their young, that the size and strength of the tail is diminishing, and that they more frequently use all four of their feet in running. If this be really the case, I cannot but consider it as a strong illustration of the care taken by a beneficent Providence of its creatures, in furnishing them with the means best adapted for their relative conditions and situations in the protection of themselves and their offspring, and diminishing those means when they become no longer of the same importance to them.

How soon would the breed of cuckoos be extinct if they made their nests and hatched their own young as other birds do! The very peculiar cry of the cuckoo would instantly lead every marauder to their nests, and we should be deprived of that note which all the world listens to with pleasure, and which forms one of the varieties of pleasing sounds which enliven our springs and summers. The instinct, also, which leads a cuckoo to deposit its egg in the nest of that bird whose young, when hatched, are so small that the young cuckoo can master them, and whose food is most congenial with its nature, is very surprising. Thus we find the young cuckoo in the nests of the water-wagtail and the hedge-sparrow, whose young he contrives to eject from the nest as soon as they are hatched, as it would be impossible for the old birds to supply nourishment for the cuckoo as well as for their own young ones, especially as the former, as he increases in size, has a most voracious appetite. I had an opportunity of witnessing this in the case of a young cuckoo which was hatched in the nest of a water-wagtail, who had built in some ivy on a wall close to my house. It required the united efforts of both the old birds from morning to night to satisfy his hunger, and I never saw birds more indefatigable than they were. When the young cuckoo had nearly arrived at his full size, he appeared, on the little nest of the water-wagtail, "like a giant in a cock-boat." Just before he could fly, he was put into a cage, in which situation the old birds continued to feed him, till by some accident he made his escape, and remained in a high elm-tree near the house. Here the water-wagtails were observed to feed him with the same assiduity for at least a fortnight afterwards. This cuckoo was very pugnacious, and would strike with its wings and open

its mouth in great anger whenever I put my hand near him.

I am not aware that any naturalist has noticed the circumstance, that those birds who are necessarily obliged to be a longer time absent from their nests in search of food for themselves or for their young, make infinitely warmer nests than those who are able to procure their food more readily. Thus we see the duck, and many aquatic birds who have a voracious appetite, and have often to go over a considerable space of ground in search of food, and are consequently a long time absent from their nest, cover up their eggs with a prodigious quantity of down and feathers, in order to prevent their being chilled. In like manner, the long-tailed titmouse, (*Parus caudatus*), who, having from twelve to fifteen young ones to provide for, must necessarily be a long time together away from them in search of food, so that she cannot herself impart the necessary warmth to her brood by sitting on them, as most other birds do, not only lines her nest with a profusion of the softest feathers and down, but makes it almost in the shape of a ball, with a small hole in the side to enter at, so that the young are effectually protected from cold in their snug abode. The

thrush, on the contrary, which can so readily procure worms on a lawn or in a meadow, so that it is not necessary for both the parent birds to be absent in search of food at the same time, lines its nest with clay or cow-dung.

The nest of the rook, also, which is in an exposed situation, has but little warmth of lining in it; but then the hen seldom leaves it, and is fed, during the period of incubation, by the cock. He also provides food for the young till the hen bird can leave them with safety to assist him in his labors.

I should not omit noticing the nest of the common house-sparrow, which is of a large size, and completely filled with feathers; and, though they have not so many young to provide food for as the long-tailed titmouse, they have a most voracious progeny, it having been calculated that a pair of sparrows, during the time they have their young to feed, destroy above three thousand three hundred caterpillars in a week, besides other insects. It is, therefore, I think, evident that a more than usual degree of warmth is necessary to be provided in the nest of the sparrow, to enable the parent birds to leave their young with safety in search of such a prodigious quantity of food for them.

#### FIRESIDE EDUCATION.

HUMAN society is composed of families. A family consists of husband, wife, children. This is not an accidental or arbitrary arrangement. The family compact originates in the necessities of our nature; has existed from the creation, and, by the good providence of God, will continue till the end of time. Accordingly, all attempts to encroach on the obligations, as well as the privileges, of the family relationship, have proved less or more nugatory, and must ever inevitably do so. What is the fundamental object of the family compact, is extremely evident: a due provision for the affections, and for the nurture and education of children—the latter insured by the permanence of the matrimonial engagement. Thus, by what we must call a primary ordination, father, mother, children, compose a community distinct in its character, and which all must recognise as essential to the subsistence and wellbeing of civil society. We have considered it necessary to state thus broadly at the outset, what appears to be the primary principles of human relationship; for there are not wanting parties who would endeavor to rear systems of society in which the family compact is to have no place, and parental care is to be absolved from its du-

ties—a dream of the imagination, which the common sense of mankind will ever reject as visionary, and consider, for all good purposes, to be impracticable.

Whatever be the benevolence of plans propounded for the rearing of children apart from the parental roof, it cannot escape notice that they proceed on a misconception of what education really is. In the treatment which nature dictates, the child is to be cared for in various ways, and for these various ways education, to a certain extent, under the immediate direction of parents, is indispensable; in a word, **FIRESIDE EDUCATION** is necessary to form the perfect being.

Fireside education is thus a wide and comprehensive thing: its enlightened object is to transform a weak, uninstructed child into a healthy and accomplished man or woman. What a variety of considerations are necessarily engaged in this onerous duty! The child is to be cared for physically; that is, as regards food, warmth, clothing, exercise, and, it may be, medical attendance. He is to be cared for morally; in which is involved the suppression of evil passions, the cultivation of the affections, kindness to animals, love of honesty and truth, and wor-

ship of the Divine Being. He is to be cared for intellectually; that is, he is to be instructed in all useful knowledge, in order that he may with advantage perform his part in society.

Any routine of education which does not embrace all these particulars, is of course imperfect. Education, as respects mere physical training, may produce a man healthful in constitution, and handsome in appearance, accomplished, possibly, in walking, riding, or in the performance of manual operations; but he who possesses no more education than this, is at best only an elegant savage. Gladiators, the knights of old, boxers, rope-dancers, and similar personages, furnished examples of this proficiency. Physical, united with intellectual education, but without moral training, produces a still more dangerous character; it is persons so educated who compose a large section of clever and designing criminals, also ambitious and unprincipled men in different ranks of society. Physical, with intellectual education, is pretty nearly the entire amount of culture imparted at hospital seminaries. No doubt at these institutions the pupils listen to moral admonitions, and repeat answers to questions on religious subjects; but that is not moral education, in the proper sense of the term, and therefore they necessarily are deprived of one of the most important elements of youthful culture.

Moral education may be guided by books and verbal admonitions; precept and persuasion are of undeniable utility; but, strictly speaking, moral culture is valueless unless principle is confirmed into habit. A child, for example, may be taught to commit to memory answers to an immense variety of questions, psalms, hymns, and passages of Scripture; and he may be made to know at the same time that it is sinful to steal, lie, or injure his neighbor; yet with all this, and apparently a paragon of learning, he may be little better than a heathen, and have no proper sense of applying his knowledge to the regulation of his own conduct. The true explanation of the phenomenon is, that the whole course of moral instruction has been a deceptive make-believe. The power of memory was evoked: but memory is not principle.

In infant schools, which are a species of enlarged and well-conducted family circles, the feelings and propensities are subjected to a systematic training, greatly to the advantage of children; and where parents are incapable of properly conducting home education, infant schools are indispensable. Independently of these valuable institutions, however, there is a lesser or greater necessity for family intercourse, and lamentable

is the fate of that child for whom no domestic hearth offers its cheering influence. The fireside may be homely, or it may be dignified; but whether it belong to poor or rich, it may be equally a shrine of the affections, a scene of happiness, a school of the heart.

A school of the heart! In these words we arrive at the true operation of moral principle. The heart must be touched; the feelings affected; the baser propensities subdued; the higher emotions quickened; and all made love and joy within. And how can this be done? Only by moral and religious principle being confirmed by training and exercise, in reference to companions, parents, brothers, sisters, and other relations, as well as the general circumstances by which we are surrounded. The very act of loving and of consulting the feelings of those with whom we are domesticated, strengthens the tendency to well-doing. Nor are the incidents which occur in a family without their value. Births, deaths, meetings of relations, misfortunes, things joyful and things sorrowful, are all means of moral culture. So likewise, within the domestic circle, are acquired habits of order and perseverance, ideas of personal intercourse and courtesy, along with much familiar but useful knowledge. Recollections of a youthful and well-regulated home form also a source of refined gratification in after-life. How frequently has it been confessed that the remembrance of a father's solicitude and affection has acted like a perpetual beacon, in warning from vice! Old remembrances, however, centre chiefly round the mother. She is the divinity of the child, and was all in all to him, before he knew of any other object of veneration. What hosts of remembrances of this dear departed shade! Her early attention to all his little wants; her anxiety about his personal appearance and behavior, as she used to send him forth every morning to school; her attempts to shelter him from rebuke and punishment—perhaps her privations, her sufferings, in widowhood; her heroic struggles to maintain appearances, and get her boy forward in the world; her delight, finally, in living to see him in that position of respectability which for years had been the object of her most fondly cherished hopes; the tranquil close of her existence and dying blessing—all this, and much more, may be said to form an inextinguishable inheritance of pleasurable recollection—a fountain of feeling perpetually welling out, and irrigating those dreary wastes of hard, every-day toil and thought, which lie irksomely in the path of life.

Nor are the benefits of family intercourse



in their immediate or remote consequences confined to the children. "We are very apt to imagine that the family arrangement is entirely for the sake of the young—that the children are exclusively benefited; and that, if it is disturbed or set aside, the young, the children, are the only persons who suffer. On the contrary, it appears to me that the old are as much interested in this divine institution as the young—that it is as beneficial to parents as to children—and that any departure from it must bring a penalty upon the parents equal to any which the children can suffer. We are accustomed to hear much, and very justly, of the obligations which children owe to their parents. But while they very wisely impress this on their children, people are very ready to forget, or not remark, that as the child owes much to the parent, so the parent owes much to the child; that while he has been the object and receiver of good, he has also been the minister of good: and every loving thought, every toil, every sacrifice on the part of the parent, has received from day to day a return—a real and most precious reward. Surely those persons judge very erroneously, who imagine that all the care, trouble, and expense they lay out upon their children is so much capital sunk, and from which no return is to be expected till the child has grown to maturity, or at least till he has reached the years of discretion. We are very apt to reckon nothing a blessing which does not come to us in a material form; and so we sometimes undervalue or overlook our highest privileges, because they do not address themselves to our eyes, and cannot be felt or handled by us. To any one who observes and reflects, it will, I think, be evident, that the parent is as much the better for the child as the child is for the parent; that infancy, childhood, youth, bestow as much on manhood, womanhood, old age, as they derive from them; that this is an instance of that general law, that we cannot do good to others without getting good from them: in this field it is impossible to sow without reaping; for the same soil which receives the seed from the bountiful hand, returns it with increase. What blessings, then, are children the means of conveying to their parents? In other words, how is it needful, for the sake of the father and mother, as well as of their offspring,

that the family life should be jealously guarded?

"The celebrated Lord Erskine has told us that he never robed himself to plead at the bar, but he thought he felt his children pulling at his gown; and if the history of human thoughts were legible to us as it is to the eye of God, we should doubtless find that multitudes of the greatest men—men who were great in the good which they were enabled to achieve, which is the truest greatness—drew their strongest stimulants from the families God had given them; and that, on the other hand, myriads who have lived usefully and well had been saved from vices to which they were prone by the consideration that these would involve in ruin those who were dearer to them than their own life. I might add a great deal more to show that those persons are in a grievous mistake who fancy that, however necessary the parent may be to the child, the child is not necessary or beneficial to the parent. It appears to me, on the contrary, that parents who do their duty, and keep their eyes open, will acknowledge that they have been amply repaid, day by day, for all their anxiety, labor, and pains; that the pleasures and instruction, the incitements to good, the salutary restraints which their children have supplied, the thoughts they have suggested, the feelings they have inspired, were cheaply purchased even with the cost and care of a family; and that children are not, as men buried in selfishness esteem, a mere tax and burden, but truly a promise and a blessing, as they have pronounced them who lived in the ages of faith."

So much we have thought it desirable to say on the general advantages of fireside in preference to any other species of management for the young; and we now proceed to the more special object of the present sheet.

We take it for granted at the outset, that parents desire to see their children grow up healthful, intelligent, honest, orderly, good-hearted—beings able to perform their part creditably in society, and a comfort to all connected with them. Attention to them from birth cannot insure these good results; but it will go far towards doing so. It is, at all events, the duty of every parent to do the utmost in his power to rear his children properly, if only to avoid future self-reproaches for his neglect.

*Revenge Extraordinary.*—A wag having had a dispute with a man who kept a sausage shop, and owing him a grudge, ran into his shop one day as he was serving several good customers, with an immense dead cat, which he quickly deposited on the counter,

saying, "This makes nineteen; as you are busy now, we'll settle another time;" and he was off in a twinkling. The customers, aghast, soon followed him, leaving their sausages behind.

## CURIOSITIES OF ART.

THE interest excited by any product of ingenuity or skill must ever be comparative. The musket of the sailor is a matter of wonder to the savage, the steam-vessel a marvel to the Chinese, and the electric telegraph a curiosity to the British. Five hundred years ago our forefathers would have been as much struck as the South Sea islander with the feats of the musket; forty years ago steam-boats were subjects of wonder to our countrymen; and soon we shall be as familiar with electric telegraphs as we are now with spinning machines, gas-light, locomotives, and steam-frigates—all of which were marvels and curiosities in their day. Since invention is thus ever active and progressive, we can regard as permanent curiosities of art only such products as exhibit vastitude or boldness of design, great ingenuity and perseverance in accomplishment, intricacy and complication of parts combined with harmony of execution, minuteness of proportions with delicacy of finish, and simulation of living agency by inanimate mechanism. In this sense we intend to present the reader with descriptions of some of the more remarkable results of human ability, confining ourselves particularly to those of a mechanical character.

The earliest efforts of mechanical ingenuity in Europe were chiefly directed towards the construction of clocks, watches, and automata. In all of these, weights and springs were the prime movers, and the skill of the mechanic was expended in rendering the movements of his work as numerous and complicated as possible. They had no idea of applying their art to the great manufacturing operations so characteristic of the present age; not that they were unskilful workmen, but that they were ignorant of that agency which has developed our steam-engines, spinning-mills, printing-presses, and other machinery. Steam force was to them unknown. Their sole great moving power was falling water—a power attainable only in a limited degree, and, when attainable, not often in a situation to be available. It was thus that ingenious workmen so frequently devoted a lifetime to the construction of some piece of mechanism, which, after all, was only valuable as an amusing curiosity. Among the more remarkable of these were their clocks and time-keepers, some of which we may shortly advert to.

## REMARKABLE CLOCKS AND WATCHES.

The famous astronomical clock of Strasburg, completed by Isaac Habrecht about

the end of the sixteenth century, deserves a prominent place in our catalogue. It has been recently renovated by a M. Schwitgue, after four years' labor; but its original movements are thus described in Morrison's *Itinerary*:—"Before the clock stands a globe on the ground, showing the motions of the heavens, stars, and planets. The heavens are carried about by the first mover in twenty-four hours. Saturn, by his proper motion, is carried about in thirty years; Jupiter in twelve; Mars in two; the sun, Mercury, and Venus in one year, and the moon in one month. In the clock itself, there are two tables on the right and left hand, showing the eclipses of the sun and moon from the year 1573 to the year 1624. The third table, in the middle, is divided into three parts. In the first part, the statues of Apollo and Diana show the course of the year, and the day thereof, being carried about in one year; the second part shows the year of our Lord, and the equinoctial days, the hours of each day, the minutes of each hour, Easter day, and all other feasts, and the Dominical letter; and the third part hath the geographical description of all Germany, and particularly of Strasburg, and the names of the inventor and all the workmen. In the middle frame of the clock is an astrolabe, showing the sign in which each planet is every day; and there are the statues of the seven planets upon a circular plate of iron; so that every day the planet that rules the day comes forth, the rest being hid within the frames, till they come out of course at their day—as the sun upon Sunday, and so for all the week. There is also a terrestrial globe, which shows the quarter, the half hour, and the minutes. There is also the figure of a human skull, and the statues of two boys, whereof one turns the hour-glass, when the clock hath struck, and the other puts forth the rod in his hand at each stroke of the clock. Moreover, there are the statues of Spring, Summer, Autumn, and Winter, and many observations of the moon. In the upper part of the clock are four old men's statues, which strike the quarters of the hour. The statue of Death comes out at each quarter to strike, but is driven back by the statue of Christ with a spear in his hand for three quarters, but in the fourth quarter that of Christ goes back, and that of Death strikes the hour with a bone in his hand, and then the chimes sound. On the top of the clock is an image of a cock, which twice in the day crows aloud, and claps his wings. Besides, this clock is decked with many rare pictures; and, being on the inside of the

church, carries another frame to the outside of the walls, whereon the hours of the sun, the courses of the moon, the length of the day, and such other things, are set out with great art."

Another clock, celebrated for its curious mechanism and motions, is mentioned by Thompson, in his continental travels. It is placed in an aisle near the choir of St. John's Cathedral, at Lyons. On the top stands a cock, which every three hours claps his wings, and crows thrice. In a gallery underneath, a door opens on one side, out of which comes the Virgin Mary; and from a door on the other side, the angel Gabriel, who meets and salutes her; at the same time a door opens in the alcove part, out of which the form of a dove, representing the Holy Ghost, descends on the Virgin's head. After this these figures retire, and from a door in the middle comes forth a figure of a reverend father, lifting up his hands, and giving his benediction to the spectators. The days of the week are represented by seven figures, each of which takes its place in a niche on the morning of the day it represents, and continues there till midnight. But perhaps the greatest curiosity is an oval plate, marked with the minutes of an hour, which are exactly pointed to by a hand reaching the circumference, which insensibly dilates and contracts itself during its revolution. This curious piece of mechanism cannot be supposed to be so perfect in all its motions as it was formerly; and yet it has suffered as little as can be expected in a long course of years, through the care and skill of those appointed to look after it. It appears, by an inscription on the clock itself, that it was repaired and improved by one Nourison in 1661; but it was contrived, long before that time, by Nicholas Lipp, a native of Basil, who finished it in 1598, when he was about thirty years of age. The oval minute motion was invented by M. Servier, and is of a later date. The tradition goes that Lipp had his eyes put out by order of the magistrates of Lyons, that he might never be able to perform the like again; but so far from this being the case, the magistrates engaged him to fix at Lyons, by allowing him a handsome salary to take charge of his own machine.

There are other celebrated clocks—such, for example, as that of Lunden in Sweden, and of Exeter, in England—which, from the number and complication of their movements and figures, may well vie with those of Strasburg and Lyons. But these we pass over, to notice two which were made some years since by an English artist, and sent as a present by the East India Company to the Emperor of China. These clocks, says a

contemporary account, are in the form of chariots, in which are placed, in a fine attitude, a lady leaning her right hand upon a part of the chariot, under which is a clock of curious workmanship, little larger than a shilling, which strikes and repeats, and goes eight days. Upon her finger sits a bird, finely modelled, and set with diamonds and rubies, with its wings expanded in a flying posture, and actually flutters for a considerable time, on touching a diamond button below it: the body of the bird (which contains part of the wheels that in a manner give life to it) is not more than the sixteenth part of an inch. The lady holds in her left hand a gold tube, not thicker than a large pin, on the top of which is a small round box, to which a circular ornament, set with diamonds, not larger than a sixpence, is fixed, which goes round nearly three hours in a constant regular motion. Over the lady's head, supported by a small fluted pillar no bigger than a quill, are two umbrellas, under the largest of which a bell is fixed, at a considerable distance from the clock, and seeming to have no connection with it, but from which a communication is secretly conveyed to a hammer that regularly strikes the hour, and repeats the same at pleasure, by touching a diamond button fixed to the clock below. At the feet of the lady is a dog in gold, before which, from the point of the chariot, are two birds fixed on spiral springs, the wings and feathers of which are set with stones of various colors, and appear as if flying away with the chariot, which, from another secret motion, is contrived to run in a straight, circular, or any other direction. A boy, who lays hold of the chariot behind, seems also to push it forward. Above the umbrella are flowers and ornaments of precious stones, the whole terminating with a flying dragon set in the same manner. These gifts were wholly of gold, curiously chased, and embellished with rubies and pearls.

More interesting, perhaps, than any of these, and yet of the simplest construction, and of the most common material, are the electric clocks lately invented by Mr. Bain, of Edinburgh. The prime mover of these machines is the electric currents of the earth, brought to bear upon the machinery, as thus described by a party for whom one of the earliest was constructed. "On the 28th of August, 1844, Mr. Bain set up a small clock in my drawing-room, the pendulum of which is in the hall, and both instruments in a voltaic circle, as follows:—On the north-east side of my house, two zinc plates, a foot square, are sunk in a hole, and suspended by a wire, which is passed through the house to the pendulum first, and then to the clock. On the south side of the house, at a distance



of about forty yards, a hole was dug four feet deep, and two sacks of common coke buried in it; among the coke another wire was secured, and passed in at the drawing-room window, and joined to the former wire at the clock. The ball of the pendulum weighs nine pounds; but it was moved energetically, and has ever since continued to do so with the self-same energy. The time is to perfection; and the cost of the motive powers was only seven shillings and sixpence. There are but three little wheels in the clock, and neither weights nor spring, so there is nothing to be wound up." Many of these ingenious clocks have been since constructed, and an illuminated one, projected from the front of Mr. Bain's workshop, in Edinburgh, moves, as the inhabitants can testify, with the utmost regularity. One great advantage of this invention is, that, supposing every house in a city provided with the simple apparatus before referred to, one electric current could keep the whole in motion, and thus preserve the most perfect uniformity of time.

As a sequel to these curious clocks, may be mentioned some watches, remarkable either for the minuteness of their proportions, or the intricacy of their parts. In the Annual Register for 1764, it is stated that Mr. Arnold, a watchmaker in London, had the honor to present his majesty, George III., with a curious repeating watch of his own construction, set in a ring. Its size was something less than a silver twopence; it contained one hundred and twenty-five different parts, and weighed altogether no more than

five pennyweights and seven grains. Another, still more curious, is mentioned by Smith, in his "Wonders," as belonging to the Academy of Sciences at St. Petersburg. The whole is about the size of an egg, within which is represented our Saviour's tomb, with the stone at the entrance, and the sentinels upon duty; and while a spectator is admiring this ingenious piece of mechanism, the stone is suddenly removed, the sentinels drop down, the angels appear, the women enter the sepulchre, and the same chant is heard which is performed in the Greek church on Easter eve.

To this list, if our space had permitted, we might have added accounts of some curious clocks constructed by Grollier and others, in which the motions were either hid, or so complicated as to deceive the observer; of some that were made to go by their own weight, or by the hidden power of the magnet; of some that were employed to indicate the force and position of the wind, the vigilance of sentinels, &c.; and of others which were applied to the movement of those intricate and curious instruments known by the name of planetariums and orreries. Had it not been for the same reason, odometers, for measuring distances travelled over, and set in motion by the limbs of the traveller, gas metres, and other self-registering apparatus, might have also come in for a share of description, as not only evincing great skill and ingenuity, but on account of the practically useful purposes to which they are applied.

#### BROOMS.

THE best brush for our carpeted floors is a long-handled one, with rounded ends, the hairs very stiff, and about as long as those in a clothes brush. This, at all events, will suffice for the purpose six days out of the seven, so that only once a week, instead of every day, the use of the genuine carpet broom may be permitted. Two house-brooms should always be provided, one for the sleeping apartments, (which should be kept up stairs,) and one for the kitchen; and these, indeed *all* brooms, should have round ends; we deprecate those which are usually seen with ends sharp and square, that seem to have been invented expressly to chip the paint from the skirting boards.

Housekeepers, however inexperienced, it is presumed, are aware that whalebone is too frequently manufactured into brooms, which are sold as hair; nor will it be requisite to inform them, that the former material is

far inferior to the latter in durability. It is not easy for an inexperienced eye to detect the fraud. The chief differences between hair and whalebone are, that the former is elastic, while the latter, if bent, retains the bend; that hair is round and whole to the end; whalebone, on the contrary, looks merely *shred*, and the points are split. A hearth-broom, for a common sitting-room, should always be composed of black hair, for the obvious reason, that being frequently used, it so often would require to be washed, if the hair were white. A hearth-brush should always be provided for the kitchen; a servant then will have neither excuse nor pretence to make use of the long-handled broom to sweep the bars of the grate—a practice too frequently adopted, to the speedy destruction of the utensil. For lofty staircases, a "Turk's head" is used, in order to detach cobwebs from corners that are too high to be reached by means of the usual house-broom.

THE WIFE TO HER HUSBAND.

THE following admirable lines, from the pen of an American lady, a member of the Society of Friends, appeared some years ago in the Sunday Times newspaper. We are told that the poem was found in the house of a tippling gardener, whom it had the happy effect of winning from the haunts of dissipation to his own domestic hearth.

"You took me, William, when a girl,  
Unto your home and heart,  
To bear in all your after-fate  
A fond and faithful part;  
And tell me, have I ever tried  
That duty to forego,  
Or pined there was not joy for me  
When you were sunk in wo?"

No; I would rather share *your* tear,  
Than any other's glee,  
For though you're nothing to the world,  
You're **ALL THE WORLD TO ME.**  
You make a palace of my shed,  
This rough-hewn bench a throne;  
There's sunlight for me in your smiles,  
And music in your tone.

I look upon you when you sleep—  
My eyes with tears grow dim,  
I cry, 'Oh Parent of the Poor,  
Look down from heaven on him;  
Behold him toil from day to day,  
Exhausting strength and soul;  
Oh look with mercy on him, Lord,  
For thou canst make him whole!"

And when at last relieving sleep  
Has on my eyelids smiled,  
How oft are they forbade to close  
In slumber by our child?"

I take the little murmurer  
That spoils my span of rest,  
And feel it is a part of thee  
I lull upon my breast.

There's only one return I crave,  
I may not need it long,  
And it may soothe thee when I'm where  
The wretched feel no wrong:  
I ask not for a kinder tone,  
For thou wert ever kind;  
I ask not for less frugal fare,  
My fare I do not mind;

I ask not for attire more gay—  
If such as I have got  
Suffice to make me fair to thee,  
For more I murmur not.  
But I would ask some share of hours  
That you on clubs bestow,  
Of knowledge which you prize so much,  
Might I not something know?"

Subtract from meetings amongst men  
Each eve an hour for me;  
Make me companion of your soul,  
As I may safely be.  
If you will read, I'll sit and work;  
Then think when you're away;  
Less tedious I shall find the time,  
Dear William, of your stay.

A meet companion soon I'll be  
For e'en your studious hours,  
And teacher of those little ones  
You call your cottage flowers;  
And if we be not rich and great,  
We may be wise and kind,  
And as my heart can warm your heart,  
So may my mind your mind."

SEPTEMBER.

I BEAR a special love to sweet September,  
Though people say partialities are wrong,  
From youthful Janu'ry to old December  
No month I love with love so true and strong.  
The year hath got its richest ripeness then,  
Like womanhood when in its perfect prime  
And comeliness, before the hand of Time  
Hath lined the forehead with his furrowing pen.  
September's lap is full, and plenty reigns  
To recompense the toiler for his pains  
And feed the poor. A pleasant look hath she—  
Such as the children love to see upon  
Their mother's face, when they her smile have won:  
Let others choose their love—September pleases me.

MACKELLAR.

## RECEIPTS.

*To Destroy Cockroaches.*—If your correspondents will try the following simple plan, I will warrant them that every beetle and cockroach will shortly disappear, and that the kitchen will not be again infested. Add about a teaspoonful of powdered arsenic to about a tablespoonful of mashed boiled potatoes; rub and mix them well together, and then crumble about a third of it, every night at bedtime, about the kitchen hearth; it will be eaten up, or nearly so, by the following morning. The creature is very fond of potatoes, and devouring them greedily, crawls again into its hole and perishes. I had occasion to have some alterations made in the kitchen stove six months after I pursued this plan, and found hundreds of wings and dead mummies of defunct cockroaches. Their disappearance was not attended with the slightest perceptible smell, and though five years have elapsed, not one has again been seen in my kitchen. In putting it into practice, any remaining crumbs should be swept up the next morning.—F. H. HORNER, M. D.

We have tried the foregoing, and found it perfectly effectual.—*Downing's Horticulturist*.

*To Remove the Turnip Flavor from Milk or Butter.*—Dissolve a little nitre (saltpetre) in spring water, which keep in a bottle, and put a small teacup-full into eight gallons of milk, when warm from the cow.

*To Perfume Linen.*—Rose leaves dried in the shade, cloves beat to a powder, mace scraped; mix them together, and put the composition into little bags.

*To Clean Flint-glass Bottles, Decanters, &c.*—Roll up in small pieces, some white, brown, or blotting paper; then wet and soap the same; put them into the vessel with a little lukewarm water, shake them well for a few minutes, then rinse the glass with clean water, and it will be as bright and clear as when new from the shops.

*Celery Sauce, for Roasted or Boiled Fowls.*—Take a large bunch of celery, wash it very clean, cut it into little thin bits, and boil it softly in a little water till it is tender; then add a little beaten mace, some nutmeg, pepper and salt, thickened with a good lump of butter rolled in flour; then boil it up and pour it in your dish. You may add half a pint of cream, a glass of white wine, and a spoonful of catsup. For brown celery sauce, omit the cream, and use red instead of white wine.

*Mrs. G.'s Famous Buns.*—One pound and a half of flour, (a quarter of a pound left to sift in last,) and a half a pound of butter cut up fine together; then add four eggs beat to a high froth, four teacups of milk, half a wineglass of brandy, wine, and rose-water, each, and one wineglass of yeast; stir it all together with a knife, and add half a pound of sugar, then sift in the quarter of a pound of flour, and when the lumps are all beaten smooth, set them to rise in the pans they are to be baked in.

*Biscuits.*—A pound and a half of flour made wet with equal quantities of milk and water moderately warm, made stiff, and rolled out very thin; cut them to any size you please, prick them, and bake them in a moderate oven on a tin. No flour to be put on the tins or biscuits.

*A Quickly Made and Cheap Cake.*—Five eggs, leaving out two whites, and beaten separately, the whites to a froth; five ounces of sugar dissolved in three parts of a wineglass of water, put into a saucepan to boil, and pour the dissolved sugar, boiling, into the eggs; when nearly cold, mix in a quarter of a pound of flour by degrees. Three quarters of an hour in a quick oven will bake it.

*A Plain Lemon Pudding.*—The juice of three lemons, the peel of one rubbed off with sugar, six ounces loaf sugar powdered, (excepting what has been used for the lemon peel,) a good sized teacup-full of bread crumbs; while it is soaking together, beat up four eggs, leaving out two whites; melt one ounce of fresh butter, and mix all well together; line and edge a dish with puff-paste, pour in the above, and bake in a quick oven for three quarters of an hour.

*A Baked Apple Pudding.*—Butter a pie-dish and line it with crumbs of bread, then place a layer of apple (cut as for pie) in the bottom of the dish, sprinkle it with moist sugar, then a layer of crumbs, and so on alternately till the dish is filled, ending with a thick layer of crumbs; pour melted fresh butter over it, and bake for an hour.

*To Make Blacking.*—Three ounces of ivory black, two ounces of treacle, half an ounce of vitriol, half an ounce of sweet oil, quarter of a pint of vinegar, and three quarters of a pint of water. Mix the oil, treacle, and ivory black gradually to a paste, then add the vitriol, and, by degrees, the vinegar and water.



